Focus on Input/Output **Scanned Imagery Gallery** Archival Reproduction Designing an Interactive Panel Discussion **Bridging Platforms**

Video: PC-TV Gets Real



Adapt to Changing Environments With Microtek's Color/Gray Scanner.

At last, a scanner that adapts to your changing needs.

The Microtek MSF-300Z Color/Gray scanner reproduces everything from 24 bit color to 8 bit gray-scale to black and white

line art. All at 300 dpi. Making it the one image capturing device that's ideal for desktop publishing, multimedia projects, presentations, even pre-press work.

And at just \$2,695, it's ideal for limited budgets, too. Especially when you consider it includes some of today's

most sophisticated color and gray-scale image editing software.

What's more, you can work in the operating environment of choice. Whether it's with the MSF-300Z for your IBM PC

or PS/2. Or the MSF-300ZS for the Macintosh.

Call 800-654-4160 or in California, 213-321-2121

for all the details. And get the one scanner that adapts to whatever you're trying to capture.



The Color/Gray Scanner is just one membe of a whole family of innovative scanners available from Microtek.





MICROTEK Better Images Through Innovation.



Michael Gosney Editor/Publisher Jackie Estrada Managing Editor **John Odam** Art Director **Jack Davis** Graphics Editor Linnea Dayton Look and Feel Editor Steve Hannaford Against the Grain Editor Mike Kelly New Products Editor **David Traub** Multimedia Editor Brentano Haleen

Martha Siebert Production Manager Jill Malena Production/Design Assistant Steve Garber Editorial Assistant

Close to the Edge Editor

Jeanne Juneau Advertising Manager Valerie Bayla Subscription Manager

Bengt Berglund European Editor c/o Pixel CH 1052 Le Mont sur Lausanne SWITZERLAND (41) 21-653-1033 FAX (041) 21-652-5710

Wavne Rankin Australian Editor McAlpine House, McAlpine Ln. P.O. Box 36 Kew, Victoria 3101 AUSTRALIA (61) 03-370-3566 FAX (61) 03-862-2728

Izuru Satsuki Japanese Editor HOLONET Nogizaka Mansion–2F 8-11-21 Akasaka Minato-ku, TOKYO 107 JAPAN (81) 3-402-B191 FAX (81) 3-402-8190

Editorial and Advertising Sales Office Verbum, Inc.

P.O. Box 12564 San Diego, CA 92112 TEL 619-233-9977 FAX 619-233-9976 MCI MAIL: VERBUM Telex 650-302-0249

Spring 1991 VERBUM (ISSN 0BB9-4507) is published quarterly. Entire contents copyright @1991, by VERBUM, Inc. All rights reserved. Reproduction of material appearing in VERBUM is forbidden without written permission. Reprint requests should be addressed to VERBUM, P.O. Box 12564, San Diego, CA 92112.





Frontispiece

Sandra Filippucci



Relay

Michael Gosney

Reflections on digital technology, art and culture by Verbum's publisher



Verbum News

A wrap-up of what's happening in the Verbum microcosm.



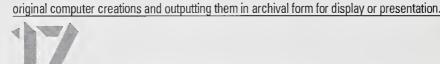
Reader Letters



Fine Art Output

Arlen Britton

What can you do to make a lasting impression? Britton describes your options in duplicating





Building Bridges: The Amiga-Mac Connection

John Donovan

Amiga-phile Donovan shows that you can get there from here—hardware and software solutions to getting graphics files from



Neomedia: PC-TV Gets Real

David Traub

Traub chronicles the video revolution happening at the PC level, cataloging the video hardware products that are making it all possible.



Gallery: Input/Output

Ten artists, many of them photographers, show how scanned images can be manip-

ulated, combined and added to in PC applications, then output in a variety of ways.

Kelly focuses on what's new for input and output, especially in video.





First Contact: Pass It Along

John Odam

Remember the old game of "Gossip," where a whispered message changed dramatically as it went

around the room? Odam asked several artists to alter and pass along a graphic image he created in PixelPaint, with fascinating results.



Secrets of the Universe Revealed: The Verbum How-To

Jackie Estrada



Verbum Interactive multimedia director Steve Lomas reveals some of the techniques used in

creating an interactive roundtable discussion for the first issue of the CD-ROM version of Verbum.



Look and Feel: Writing and Designing for Multimedia

Linnea Dayton

Dayton gives behind-the-scenes details on what was involved in writing "articles" for Verbum Interactive 1.0.



Verbumalia

Everything you ever wanted to order.



The Verbum cover has been consistent over the years—in its inconsistency. Each issue's design has been a fresh experiment, the only common element being the seven bars at the upper left (see the Verbumalia section for previous issues). With issue 5.1, we're throwing our cares to the wind and losing the bars thanks to the unswerving vision of art director John Odam. This issue's cover art,"Frise 1," is part of a seven-piece series titled "De Temperantia," created by Dominique de Bardonneche-Berglund of Morges, Switzerland. The background texture, emulating an old and tarnished oil painting, was created on the Mac II with Graphistpaint. It was then brought into Photoshop and recolorized. The central figure was scanned in black and white from L'encyclopédie Diderot et D'Alembert and colorized in Photoshop. The twirl filter was used to produce an 800-degree twirl on the figure. The eyeball, drawn in MacPaint in 1985, was colorized and positioned in the center of the twirl. The 3D elements with the figure image wrapped around them were created with VideoPaint (a newer version of Graphistpaint).

Subscription Information:

Single copies are available for \$7 on newsstands (\$7.50/Canada) or for \$9.50 (postage paid) from VERBUM. Inquiries regarding quantity discounts for groups are encouraged. Contact Circulation Department, VERBUM, P.O. Box 12564, San Diego, CA 92112.

To subscribe (for four issues), send check or money order for \$24 to VERBUM Subscriptions, P.O. Box 12564, San Diego, CA 92112, or telephone with VISA/MasterCard number. (619) 233-9977/fax 9976. Canada and Mexico—\$28 (U.S.) drawn on a U.S. bank or international postal money order, payment with order required, air mail delivery. Foreign—\$45 (U.S.) for airmail subscription, drawn on a U.S. bank or international postal money order, payment with order required.

Editorial Submissions

Write to Verbum Editor for a copy of Verbum's Editorial Guidelines at the San Diego P.O. box.

Art Submissions

Send creative works with a 100-word explanation of the process used (including hardware and software) and a 50-word biography, on disk and on paper (Macintosh format preferred, MS Word or MacWrite for text files). If work involves combined media, photostats, photos or transparencies are welcomed; color prints are preferred. Please include a self-addressed, stamped envelope for return of the materials. Send to Verbum Art Submissions.

Production Notes

Issue 5.1 was produced with PageMaker 4.0 on Macintosh Ilcx and Ilci machines. The color pages (except the ads) were output on a Linotronic L-300 with Aldus Pre-Print, and all color images are either from artists' electronic files or from scans on a Nikon slide scanner. Film was output by Central Graphics and Laser Express of San Diego as negatives at 2540 dpi. Fonts used in this issue were Adobe's Umbra, Univers Condensed, Utopia and Zapf Dingbats. Verbum 5.1 was printed on 60# Northwest and 100# Warrenflo (cover) by Pendell Printing of Midland, Michigan.

Frontispiece

Sandra Filippucci of New York City created "The Chalice and the Blades" using an Amiga computer with DigiView video digitizer. The finished piece is a 46" x 36" "digital monotype," a mixed-media construction output on acid-free paper with hand airbrush and tinting. This work is part of the artist's "Stone Age Series," recently exhibited at the Verbum Gallery of Digital Art. Her one-person show "Hybrids" will be at The Museum of American Illustration in New York City October 2 to November 1, 1991.

3



A



In and out of the vortex

he personal computer is, in a way, a kind of digital vortex. We pour stuff into this alchemical vortex. We invoke chants, meditate on icons and perform rituals. Then we call forth that same stuff, transformed.

Input and output. Scanning and printing. Digitizing video, transferring to videotape. Digitizing sound, playing through MIDI. Into the digital vortex, and out again.

This issue of *Verbum* explores the many dimensions of *input* and *output* on personal computers.

On Digital	
Technology,	
Artand	
Culture	

WHAT'S INSIDE

etting artwork out of the "digital vortex" and onto the gallery wall is an ongoing concern for artists who wish to bring their PC-assisted creations into a fine art context. We've treated this subject before, but are pleased to offer the best overview yet, "Fine Art Output" by Arlen Britton.

An increasingly important dimension of input and output is communication between various personal computer platforms. John Donovan offers his practical insights in "Building Bridges: The Amiga-Mac Connection."

In his "Neomedia" column, David Traub comes to grips with the world of digital video by offering a comprehensive overview of essential products.

The 5.1 Gallery concentrates primarily on works created with scanned input, with some interesting output strategies. The techniques shown here, scanning and manipulating images with programs such as Adobe Photoshop on the Mac, represent perhaps the most distinctive and widespread trend in the world of digital art. Manipulating scanned images and combining scanned images with PC-generated illustration is truly... Something New. Illustrators, photographers and video artists are all involved. Check it out. (If you want to learn more about this area, see previous issues of *Verbum*, and *The Verbum Book of Digital Painting* and *The Verbum Book of Scanned Imagery.)*

John Odam's "First Contact" takes a different approach this time: an input-output experiment with several digital artists. John chose one of his scanned-image illustrations and passed it to Junko Hoshizawa, who manipulated it and passed it on to another artist, and so on. The results are fascinating.

This issue's "Secrets of the Universe Revealed" how-to column focuses on a landmark multimedia project. It recounts designer/director Steve Lomas's step-by-step development of the Verbum Roundtable, an interactive panel discussion (part of *Verbum Interactive*, a new CD-ROM magazine—see page 52). It involves video, interface design, interactive programming and more.

In "Look and Feel," Linnea Dayton gives us some insights into the new creative process of writing and designing for multimedia.

Finally, in "New Frontier Products" Mike Kelly summarizes what's new in video, scanning and printing.



MILTON MONTENEGRO



THE FORWARD MARCH OF PROGRESS

t Verbum we try to maintain a balance between the real and the possible. Beyond the microcosm of real and possible inherent in each issue of the magazine, we've had other projects going on during the past year. On the side of the real, it's been our how-to book series. On the side of the possible is *Verbum Interactive*. The VI journey has taken us to the far frontiers of the often exciting, sometimes unsettling, always intriguing world of converging media. We'll be covering this new world as it evolves in the pages of the magazine, and sharing it on the laser-encoded surface of *Verbum Interactive*.

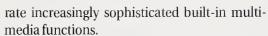
PC-TV

Television is going interactive: Commodore just released its CDTV system and Philips will launch CD-I (compact disc interactive) products later this year. Even Kodak brings a CD format to the table: the PhotoCD. ACTV is testing an interactive cable network with positive results from users.

THE SUPERMEDIA PC

Personal computers are finally realizing true interactive multimedia. CD-ROM titles such as Reactor's Spaceship Warlock and Warner New Media/Time magazine's *Desert Storm* set new standards for multimedia publishing. Fiberoptics advances are bringing on-line delivery of such publications closer to commercial reality. And the PC itself is evolving quickly: the Commodore Amiga now comes with interactive multimedia software, and the NewTek Video Toaster gives the humble-but-mighty Amiga an awesome new level of video production power. Microsoft has defined the multimedia PC ("MPC") standard hardware platform with enthusiastic industry support, and the multimedia extensions for Windows are coming soon. Apple's System 7, a quantum upgrade of the Macintosh software environment, will incorpoSummer: A New Mutation of the Verbi Strain

In the next issue of Verbum, we'll zero in on the multimedia frontier (see issue 4.2, the first time we concentrated on the subject; it spawned Verbum Interactive). We'll also put our focus on fractals, games, 3D rendering, photo manipulation, multimedia design, and for the first time in our pages, the ripening subject of virtual reality, including an "insider" look at the Lawnmower Man virtual reality film project. So join us. Be conscious. Do great work. And, let us not forget: have fun!



The trend, for better or worse, is obvious. PCs are not only going to merge with the telephone and home entertainment center, they're going to talk to you, listen to you, show live video and connect transparently with an increasingly rich and varied stream of "data": sound, music, voice, graphics, photos, text, handwriting, hypermedia, and more. Programming breakthroughs in artificial intelligence and "fuzzy logic" will make your PC *smart*. It'll teach you how to do what you need to do, take direction with ease and navigate the net, cruising through the multimedia data streams, searching, uploading, downloading, and storing what you want, how you want it. Your means of interacting with this cyberspace world will advance as well.

THROUGH THE LOOKING GLASS

Crisp color monitors and touchscreens, mice, remote control joysticks . . . devices that allow users to interact with a multimedia world. What's next? Why not put your hand inside the digital vortex? Why not your whole body? This is virtual reality, and it is more than a buzzword. The interface is a headset with eyephones (mini stereo CRTs) and a dataglove. Or even a totalbody-sensing datasuit. Virtual reality is getting real before its time. During the past 18 months, the industry and business press has covered the subject with wild abandon (wildest was The Wall Street Journal's front page piece emphasizing the "electronic LSD" angle). And this year, VR enters mainstream pop culture: Lawnmower Man, a feature film based on a Stephen King short story but taking virtual reality to its controversial extremes, is coming.

Well, it's true. Some of these subjects get a bit far out. Even scary. But this is *real* reality stuff, as unreal, or "virtual" if you will, as it seems. And here's why we keep on the subject: mastery of electronic art and design tools, the concern of many *Verbum* readers, is essential to the design of multimedia interfaces and environments. Great opportunities are arising. And great needs. It's important that we do this supermedia right. It's important that we consider its implications, think things through and create the products and "market"—human reality—of cyberspace with conscience and thoughtful design.



(NOTICE: if you prefer cynicism and negativity to envisioning and building a healthy world, if you're into the dark "No Future" scene, or if your definition of art is "just a job"—well, read this anyway)

Creative people change the world.

That's it.

That's where civilization-and its offspring Modern Man-came from.

The vision and invention and art

of creative people.

Creativity, in its primal sense, is the force of Creation itself, imagination and love, working through us.

Art transmits the core experiences of life.

Ideas, feelings, fears, hopes and dreams, visions.

Art communicates the human condition-and the human evolution.

As a whole, a culture's art makes up its mythos.

It's a pantheon of heroes and demons, big ideas and simple truths,

a symbolic reflection of the society and mind of the times.

The essential Mythos,

the holonomic Hero's journey,

an alchemical concrescence,

the morphogenetic gestalt of the culture, comes through,

in Story.

The Story is us.

The Story takes many forms.

Well-crafted creative works;

works that take on, somehow, a life of their own

The Stories of our Mythos.

These Stories guide us inside ourselves.

To each other.

To the encompassing world.

To the divine.

And back to Earth.

The Muse came first in music.

Poetic thought of God. Lyrical voice of Angels.

Through the ages, artists craft the channel.

We listen.

Meditate.

Dance.

Pass on Stories in Song.

The Muse and electric light.

At the end of the 20th century, we telephone heaven.

We capture the music.

Echoes of spirit everywhere,

on CD and tape and Walkman,

filling our mind.

We relay reality on film.

We televise.

We digitize.

We interact the media multitudes.

The Story comes through our generation.

Pull back.

Rise up.

Get the picture.

What comes through the art rock?

(e.g., BeatlesWhoYesTullFloydJoniDeadBowieDylanGabrielSting)

What do the jazz players hear?

What do our celluloid playwrights teach?

The monolith in 2001?

Darth Vader, E.T., Captain of the Enterprise,

George Burns...

Back to work.

What did "God" say in that film?

"It can work."

THE THIRD ANNUAL DIGITAL ART BE-IN

his year's Verbum Be-In, was, well, a real groove. Over 1500 people attended the January 12 celebration of digital art and creative "cyberculture" held at the San Francisco Fine Arts Center.

A take-off on the original "Human Be-In," held January 14, 1967 in San Francisco, the Digital Art Be-In was also timed to coincide with the Macworld Expo. But, as in the past, it wasn't Mac-exclusive. The performances and demonstrations were generated on Mac, Amiga and IBM-style systems.

Interestingly, this year the economical, video-ready Amiga seemed to steal the show. German artist Brumbaer mounted an exhibit of his framed Amiga paintings. Newtek,

developers of the revolutionary Video Toaster for the Amiga, demonstrated the video-productionstudio-on-a-board with live video (see Verbum 4.3, "Confessions of an Amiga User"). And Vivid Effects's Amiga-driven

Mandala system offered users a chance to enter an interactive virtual world through the lens of a video camera.

Be-In attendees experienced a select group of exhibits. Event sponsors Supermac Technology and Pantone displayed their essential wares: state-of-the-digital-art software/hardware and color output standards, respectively. Todd Rundgren's Utopia Grokware demonstrated its GrokGazer cyberdelic software and related products. San Francisco's original underground newspaper The Oracle made the

connection with the Human Be-In, exhibiting its just-released reprint of all Oracle issues in hardbound form. And Eric Gullichson, the innovative pioneer of affordable virtual reality, made his Sense8 system available to Be-In attendees.

As at previous Be-Ins, the central attractions were cyberart performances. This year, Vincent John Vincent gave two performances simultaneously: he danced and mimed on a stage 25 feet above the crowd in the demonstration area while his image inside a virtual environment generated with his Mandala software—was projected on a 15-foot screen. In a large

room adjacent to the demonstration area, the all-female "MIDI marimba" band D'Cückoo played several sets throughout the evening. Particularly effective was a video feed of the band superimposed with Utopia's FlowFazer images and projected on a large rear-projection screen from a Macintosh. This four-member ensemble weaves African, Asian, pop and funk threads in a tapestry they call technoroots. They play a variety of custom-designed MIDI percussion instruments, triggering an amazing range of digital sound and music samples. Between rhythms.

Produced by Verbum and Sound Photosynthesis of Mill Valley, California, the Third Digital Art Be-In built on the successes of the previous two events with a coordinated balance of planning and

> spontaneity. Check with Verbum around the first of January for information on the next Be-In.

Industry analyst and John Lennon fan Tony Bove, being in

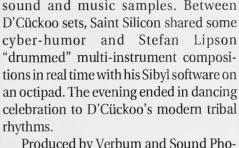
D'Cückoo defining the 90s sound

Candice Pacheco of D'Cückoo on synthesizer guitar

MONDO 2000 editor Ken Goffman (a.k.a. R. U. Sirius) Susan Wysocki of Vivid

Effects demonstrates the Mandala system Verbum staffers Susan Gallagher and Brian Duck

doing door duty Fun in virtual reality























CYBERARTS INTERNATIONAL

Last September 8–10, the first CyberArts International conference was held at the Biltmore Hotel in Los Angeles. Emphasizing cyber technology applications in the fields of entertainment, education and the arts, the event combined a trade show, presentations and performances. The conference, brainchild of Keyboard magazine editor Dominic Milano, was produced by Keyboard and Miller Freeman Expositions. This year, we are pleased to announce Verbum's association with Keyboard in producing the conference, to be held November 14–17, 1991, in Pasadena, California.

Dominic summed up the CyberArts concept last year: "The idea is to bring together artists from all walks of life, people who are authors and storytellers and moviemakers, so they can start dreaming about the possibilities. Why do you simply have to *simulate* the real world [with this technology]? Why can't you *change* the world?"

For information on the Second Annual CyberArts International conference, write, fax or call Verbum or CyberArts International, 20085 Stevens Creek, Cupertino, CA 95014, 408-446-1105, fax 1088.

VERBUM INTERACTIVE

Verbum Interactive, the gargantuan multimedia magazine on CD-ROM, is shipping at last. Its coming-out party, co-sponsored by GTE Imagitrek, was held in Beverly Hills on April 2, on the eve of the Home Media Conference. Verbum Interactive 1.0 is a 2-disc CD set, with the second disc containing an interactive panel discussion among multimedia industry leaders Marc Canter of MacroMind, Jonathan Seybold of Seybold Seminars, Steve Arnold of Lucas Arts, Robert Abel of Synapse Technologies, Shaun Deane of Apple Computer and Tom Corddry of Microsoft. VI contains a plethora of exemplary multimedia files (all functioning), interactive feature stories and music tracks that play on audio CD players, including works from Graham Nash, Todd Rundgren and D'Cückoo. (See the Verbumalia section in this issue.)

DIGITAL TYPOGRAPHY: THE BOOK

The fifth and final book (for the time being) in the Verbum Electronic Art and Design Series, *The Verbum Book of Digital Typography*, is now available for those who want the edge in type design and designing with type on the desktop. (See the Verbumalia section.)

VERBUM GALLERY OF DIGITAL ART

The Verbum fine art gallery is completing its first exhibit season with a show of 3D works by computer-art pioneer Barbara Nessim. The exhibit consists of framed and mounted pairs of nearly identical images, accompanied by a viewing device containing slides of the same images, allowing the viewer to see the pictures in 3D. The Nessim show follows on the heels of a well-received Laurence Gartel exhibit, titled

Werbum GALLERY OF DIGITAL ART "Nuvo Japonica." At his opening New York artist Gartel (watch for his "Absolut Gartel" ads in magazines this fall) created "on the spot art" using a video camera to capture guests on screen and

then manipulate their images on the Amiga with the Video Toaster. The results were output as 3" x 4" color prints on a Panasonic AG-EP70 sublimation thermal dye transfer printer.

Plans for the '91-'92 gallery season are underway. Call Verbum for information on the gallery and on investing in digital fine art works.

A fall exhibit is being planned for New York City, possibly the first glimmer of a full fledged gallery in the heart of the "Art." Laurence Gartel creating on-the-spot art at the opening of his "Nuvo Japonica" show at the Verbum Gallery of Digital Art.



READERS

Small Print

As a new subscriber to Verbum, it took a while for me to realize your strategy: We aren't supposed to read *Verbum*, we're just supposed to look at the pictures. And read the advertisements. Clever!

Is it possible that everyone at *Verbum* is in their 20s, with super-keen eyesight? Or maybe you only read the text on computer screens, and once it is on paper, you lose interest? If you would like people like me to read more than the ads, why not take a tip from your advertisers: use industrially certified, consumer-approved type font sizes?

What do you say? Please don't stay with the "aesthetics before usability" crowd. Strike a blow for legibility!

Donald A. Norman
Del Mar, Calif.
You're not the only one who's
pointed out this problem, which
seems to happen in art journals—
and you're right! We take great
pride in every word we print in Verbum. As you'll see in this issue, we're
working on readability. Thanks for
the nudge.

DOS Is Gut

I am more than thrilled that with *Verbum* you have addressed an inner hunger in the design industry that molds "True Art" and "digital media." I have not even finished reading the Winter 90/91 issue but had to write to applaud your inspiring magazine.

While the design industry certainly revolves around the Macintosh and Amiga platforms, I am curious if you see a trend of computer-generated multimedia art moving to the DOS platform. Will you address these topics in coming issues?

Susan L. Pirera Autodesk, Inc. Sausalito, Calif.

Windows 3.0 offers DOS users a graphical environment similar to the Mac, and most of the materials produced with Macs and Amigas can be converted. Right now DOS machines have more limited production capabilities, but the "installed base" or market for multimedia programming is potentially far larger than for Mac and Amiga.

(more letters on page 60)



radus



THERE WAS PANTONE 485 EVERYWHERE.

SHE WIPED A TEAR FROM HER BIG PROCESS BLUE.

HER SKIN WENT COMPLETELY PANTONE 263."

He didn't want just any colors. They had to be perfect.

PANTONE** perfect. Then along came this thing called

Radius. It had colors down cold. The colors he saw on

his large display were the colors he got. A special

Pantone PrecisionColor Calibrator made cer-

tain of that. Now he could concentrate on

his passion. No, not Brenda. Color. He had his choice of 8, 16, or 24-bit. He chose 24. He also went with QuickColor." a graphics engine that accelerated functions by 600%. That was good. It was all good. Except.

of course, for Brenda's evil twin. For your

nearest Radius reseller, call 1-800-227-2795.

With the Aldus Design
Team—Aldus PageMaker*,
Aldus FreeHand* and Aldus*
PrePrint*—you'll have complete command over the entire design and production process.

Because this team of professional software tools for the Macintosh* not only gives you the creative freedom to break the rules—it also gives you the precision and control to get away with it. So call Aldus at 800-333-2538, Department 18J, for the name of your nearest Aldus dealer, or to request free product literature.

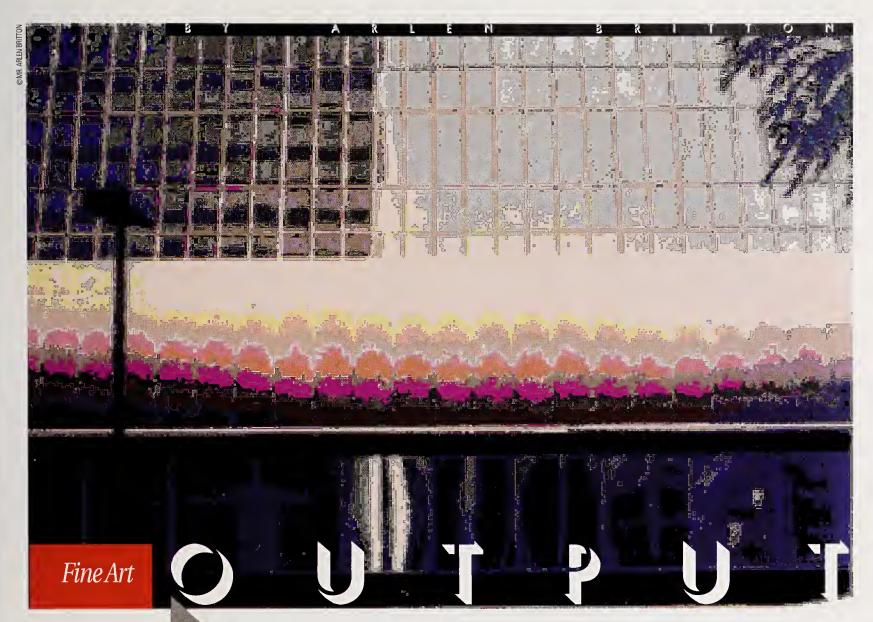


ALDUS

The Creative Edge in Business.



This ad was created with the Aldus Design Team. Aldus, the Aldus logo, PageMaker and Aldus FreeHand are registered trademarks; and PrePrint is a trademark of Aldus Corporation, Macintosh is a registered trademark of Apple Computer Inc. ©1990 Aldus Corporation. All rights reserved.



How Can You Make It Last? T'S DIFFICULT for computer artists to make a lasting impression. Many lack an understanding of the limitations inherent in the new technologies for image output and how these technologies affect the permanence of images. If you are an artist concerned about preserving the computer-assisted images you create, this article will help you sort through the available options and make informed decisions based on your needs.

All color images, regardless of the medium used, are affected by light, heat, humidity, and air pollution. However, the chief limiting factor for image permanence is the nature of the dyes used to form the image, not the paper or other material it's placed on. In short, you'd be wasting your money if you were to run acid-free or rag paper through a color copier or ink-jet printer.

Photography is the medium of choice for computer art output and presentation because it allows you to record more detail than any other method and to reproduce an image on demand. Also, photographic technology is capable of producing long-lasting, "archival" images, whereas ink-jet, thermal transfer, dye sublimation, and color copier technologies are not.

I put the term "archival" in quotes, since the only photographic images proven not to deterio-

Electronic Brotherhood

Arlen Britton

The 35mm Polachrome original was duplicated on Fujichrome Duplicating Film, scanned on a Howtek Scanmaster II at 200 dpi into a 32-bit PICT file. The artist then opened and manipulated it in Photoshop.

rate over time are those made on fiber-based black-and-white paper. Although none of the color photographic processes has been around long enough to determine how permanent the images made with them really are, some general conclusions can be drawn based on accelerated aging tests under various conditions of display and storage. Some of the information that follows regarding the longevity of films and papers is based on tests conducted by Henry Wilhelm, a leading expert on photographic image stability (as described in the article "Going! Going!! Gone!!!" in the June 1990 issue of Popular Photography). Any product recommendations made here are based on his test results.

Archival output is a generally a two-step process: first you need to produce an "original" version of your image; then you can proceed with making prints for exhibition or presentation purposes.

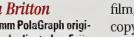
Television GraveYard

Arlen Britton

The 35 mm PolaGraph original was duplicated on Fujichrome Duplicating Film, then scanned and manipulated using the same processes as for "Electronic Brotherhood."

Hoof and Mouth Disease

Kurt Johnson Three separate scans (the bull, the lipstick and the lips) were opened and combined in Photoshop.



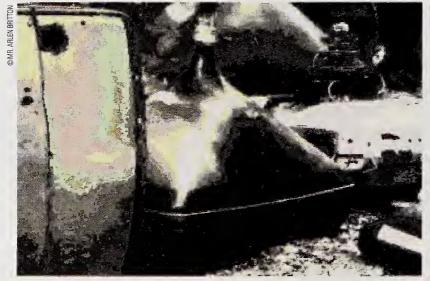
film, you should always make more than one copy of your image. With 35mm or 120 film, this duplication is relatively inexpensive, but once you start working with 4" x 5" or larger sheets, your costs go up dramatically. Even so, it's better to have some insurance against unforeseen circumstances, so I recommend making at least three "originals" for each image, regardless of the

ONE OF MANY ORIGINALS

output size. Because virtually all film recorders are set up for processing E-6 color transparency films (Ektachrome, Fujichrome, Agfachrome, etc.) and because certain films are more archival than others, you must make a series of compromises in order to safeguard your image. Overall, the best transparency film to use is Fujichrome. It has fine grain, renders colors accurately, stands up to projection better than any other film of its type and should last at least 65 years in dark storage.

Regardless of whether you output to paper or

After producing an original of an image (whether output on a color printer, a color copier, or film), take it to a professional photo lab and have duplicates made to match the color and density of your original, on Kodachrome film if possible; otherwise have them made on Fujichrome Duplicating Film. Store your originals and duplicates apart from each other in archival polyethylene or Mylar sleeves, such as those sold by Light Impressions (see resource list), in a dark, safe place with a temperature of around 75° F and a relative humidity of about 45%. Designate one duplicate for showing to potential clients or interested galleries and another to be used strictly for printing. Don't even think about using the original for anything. (continued on page 61)







FilmMaker*

The Professional Animation/Presentation Program for the Macintosh

PARACOMP

Can Do It!

The wait is over! With FilmMaker you can create the powerful and elegant animations that until now you have only dreamed of. FilmMaker has been designed to save you countless hours of effort while allowing you to produce the ultimate in multimedia presentations. Have you ever dreamed of full-screen anti-aliasing, real time control over the path, position, scale, and rotation of animated objects and much more?. FilmMaker can do it!

With FilmMaker great animations are in the can. To find out how you can become a "FilmMaker" call Paracomp today at 415/956-4091:



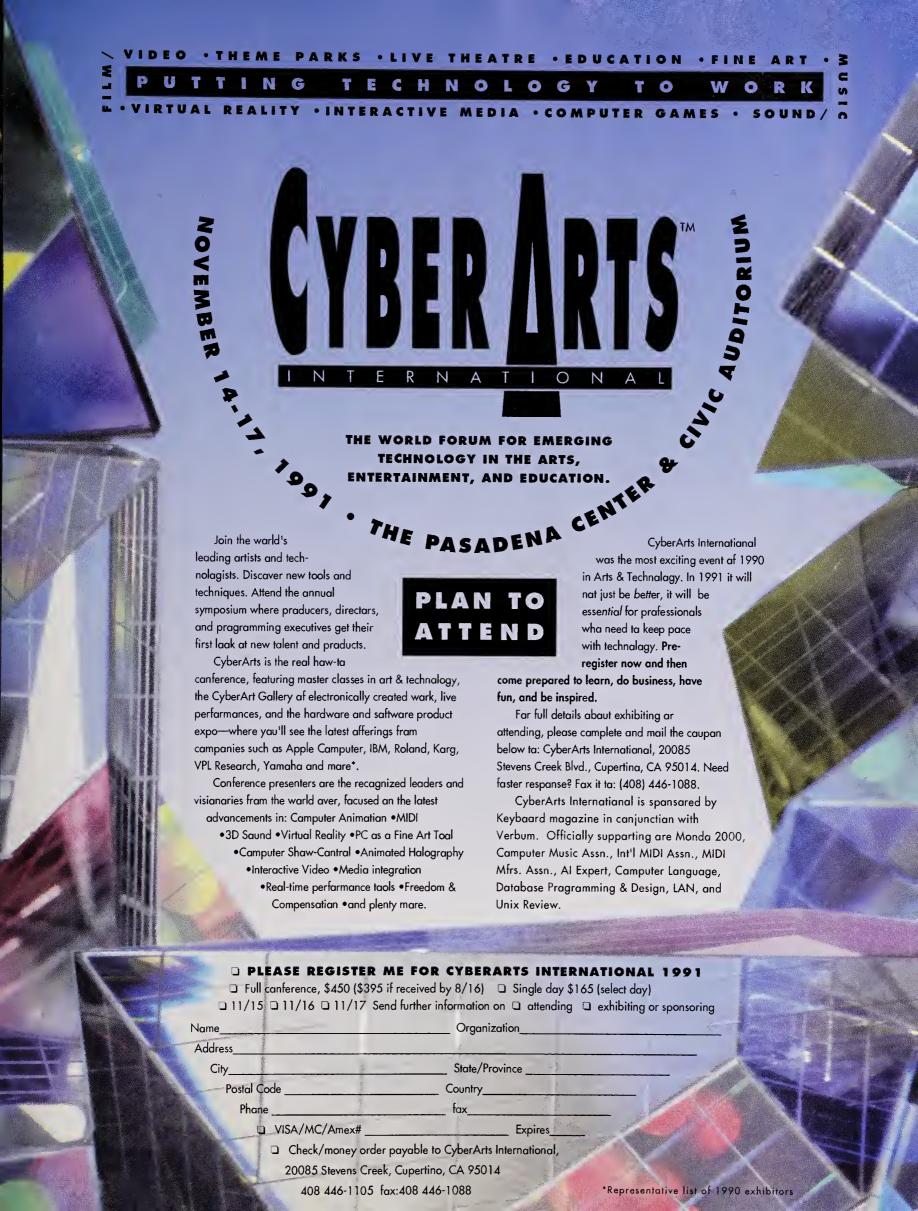
Paracomp, Inc. 1725 Montgomery Street Second Floor San Francisco, CA 94111 415/956-4091

P A R A C O M P

©1990 Paracomp, Inc. FilmMaker is a trademark of Encore Development, Paris, France.

Other brand and product names are trademarks or registered trademarks of their respective holders.





MEDIA '92-the international exposition and conference for multimedia technology and products-premieres February 27-28 at the L.A. Convention Center. Expand your market base worldwide, launch new products, and sell directly to thousands of end-users. MEDIA '92 is the essential marketing arena for multimedia will be the technology. An industry responsible for 25% of the growth in the PC market.* This year's innovations will change world we live the Reserve exhibit space now for MEDIA '92, an incomparable marketing opportunity sponsored by Publish and **MACWORLD** magazines. An expo in show motion.

Send completed coupon to Mic ☐ Yes, I want to secure booth s ☐ Yes, I want to attend MEDIA '	hael McMahon, Mitch Hall Associates, 260 Milton St., Dedh pace at MEDIA '92. 92.	nam, MA 02026 or call (617) 361-1031.
Name	Title	
Company	Address	

City/State/Zip

Telephone

BULDINGBRIDGES

Amiga to Mac

age and had saved the bitmapped images in Amiga's standard IFF format. The images needed to be converted to a format compatible with the software engine behind Verbum Interactive, MacroMind Director. The format chosen was the Mac PICT standard.

The process required two distinct steps: first, the physical movement of the images from one platform to the other, and second, the conversion of the images to the new format. This project gave me a chance to use just about all the available techniques for moving images between the Amiga and the Mac. Come along, and I'll show you how things went.

Building bridges
between
platforms is
important to all
users. For those
with less widely
used systems,
it is essential.

LL OF US working in the creative part of the computer industry are fortunate. Virtually everywhere we look, we see advertisements announcing new desktop revolutions. But before we even begin to read these ads, we instinctively seek out one fact before all others: which platforms support the product? If a product is not designed to work on our machine, we lose interest instantly. This unconscious screening process is understandable but, surprisingly, it is becoming less necessary.

Several software packages now give users the tools necessary to easily transfer text and images from one platform to another. There are even emulators that allow one machine to use programs once considered exclusive to other machines. For example, almost all Macintosh and PC applications can now be run straight out of the box on an appropriately equipped Amiga. Mac users also have access to emulators such as SoftPC from Insignia Solutions to run DOS-based applications. This merging of multiple platforms into a single box is one of the most exciting trends in the world of desktop computing. Thousands of users are giving the futuristic buzzword "interconnectivity" a concrete meaning today.

This article will give you an overview of one of the most dynamic of these interminglings, the Amiga-to-Mac connection. It doesn't matter whether you own a different platform; the principles remain the same no matter which bridge you decide to build.

NO MACHINE IS AN ISLAND

I recently had the task of transferring a 900-frame animation, originally developed on an Amiga, to a Mac II. The goal was to include it on Verbum Interactive (the CD-ROM version of *Verbum*). Tracy Sabin created the original animation using Disney's Animation Studio pack-

TRANSFER METHODS

The first step in converting the animation was to solve the problem of transferring files between the two systems, since there are fundamental differences in the hardware. I needed a common medium through which to move the files. I had several options from which to choose.

1. Serial communication The ability to send files between computers via a serial port is universal. While simple in principle, there are few areas of computer usage more burdened with arcane terminology than that of serial communication. It's as if the techno-nerds had been banished by the gods to this one remaining stronghold. There they practice their black art with a vengeance. Whether you connect two systems directly with a null modem or download files from a bulletin board, you face the problem of understanding communication protocols. Unfortunately, my membership in that dark brotherhood prevents me from giving you anything but a warning: Have a knowledgeable friend set up your system and forget about the topic entirely.

Once communication has been established, you have a subtler problem to face: compression. Files on publicly accessible bulletin boards are usually saved by using some form of compression, in order to conserve valuable storage space. Since the programs used to decompress files are often unique to each platform, decoding files can present a problem. So if you plan to transfer files using this method, be sure to have a common compression scheme.

2. *Networking* I found that linking the Amiga into an existing Macintosh network is the best possible way to move files. Attaching an Amiga to an existing AppleTalk network allows movement of even the largest files. The introduction

elcome to the age of nondenominational computing

IF ALL the hype of the world's computer marketing departments were to be believed, committing oneself to a particular computing platform would be free of problems or limitation. The vision they present is of a self-sufficient world in which every type of application is possible or will soon be available. The reality, of course, is that choosing a computer platform, like all choices, both opens and closes doors of opportunity. There will always be applications that will not run on your machine, clients who will demand output in formats you cannot support and friends who will chide you for picking a system inferior to their own.

Software developers have long recognized that their products are not introduced into a vacuum. When they develop a new word-processing program or paint package, they realize that users need a way to import their existing work. To ensure this, file formats are agreed upon. But once defined, standards tend to become outdated by the march of progress. The result is additional standards.

Eventually an application may need to support a half dozen formats. This evolution of file formats is really a sign of life and growth. Don't expect this process to end. While accepting this as a given, you should not remain passive. Keeping up to date with this process is only one of the responsibilities of living in the digital age.

The trend throughout the industry is toward a common ground of similar graphic user interfaces (GUIs). This is the direction we are all traveling. Soon we all will "do windows." But the way we interact with our systems is converging more quickly than the underlying structures. System-specific structures are complex and will be slow to change. Fortunately, the need to reach beyond the limitations of an individual platform has generated a category of products whose goals are to break down the barriers between users and their various machines. To recast files created on a foreign platform, one need only purchase the software and hardware to do so.

3. MAC-2-DOS If neither serial communication nor networking is available, a combined hardware/software solution in the form of MAC-2-DOS comes from Central Coast Software. Using a 3 1/2" diskette as the link between machines, MAC-2-DOS provides a convenient and portable medium. Because the disk drive mechanisms on the Amiga and Mac are different, you will need to buy a Mac-compatible drive. The one that Central Coast sells can serve a dual purpose as a standard Amiga drive. MAC-2-DOS will format Mac-compatible diskettes and will allow transfer of files in both directions. I chose this method to move hundreds of frames, and it worked flawlessly.

MAC-2-DOS excels at moving ASCII and MacBinary files. Other conversions that are supported include PostScript and MacPaint-to-IFF. Choosing MacBinary allows you to transfer both the data fork and the resource fork of a standard Mac file. The resource fork is not useful in the Amiga environment and is not normally saved. Because of the differences in file structure, the user may need to provide information about the Mac file "type" and "creator" codes. This way the transferred Mac file will be able to trigger the appropriate application.

The only drawback I encountered with MAC-2-DOS had nothing to do with the program itself but rather with its dependence on diskettes. Image files tend to be very large, and chances are good that some will not fit on a single disk. If the image files exceed the space available on a diskette, you may have no choice but to use serial communication, networking or emulation.

4. Emulation AMAX II from ReadySoft is a low-cost, hardware-based Macintosh emulator that turns the Amiga into a Mac Plus or SE clone. With it, almost all Mac software can be run directly out of the box. Using AMAX II, you can even format Mac-compatible removable media. Next to being on the same network, there is no better way to transfer images.

Because AMAX II is a full-featured Macintosh clone, a complete discussion of its capabilities is beyond the scope of this article. I should mention, however, that its major drawback is lack of support of direct transfers between hard disks on the Amiga side and those on the Mac side. Thus, the size of a floppy once again becomes the limiting factor. There is no inherent reason to prevent direct hard-disk-to-hard-disk transfer. I hope that ReadySoft will add this essential feature soon.

SOFTWARE CONVERSION

Once a pathway has been established between the Amiga and the Mac, the next step is to convert the image files to a usable format. On the Macintosh side, one of the most flexible packages for image processing is the highly touted Adobe Photoshop. While format conversion is only one of its features, it was especially appropriate for my task because it supports the Amiga IFF standard. Indeed, I used Photoshop to convert the majority of the animation's images.

On the Amiga side, I chose two programs to make the remaining conversions. The first, RasterLink 3.0 (formerly known as ImageLink) from Active Circuits, specializes in file conversion. It moves images between Amiga, Mac and IBM formats with equal ease. The second package, ASDG's Art Department Professional (ADPro), is much more than a file translator. It is, in fact, the closest thing available to Photoshop for the Amiga. As in the case of Photoshop, ADPro's file conversion abilities represent only a fraction of its uses. Doing justice to ADPro's other image-processing capabilities would require a separate article.

RasterLink is the central program in a family of products from Active Circuits, Inc. Other programs in the family include CineLink, for recording images to high-quality film recorders, and TGALink, which exploits the Amiga's built-in PC bus to control a TrueVision TARGA board. Together these programs provide a comprehensive set of tools for converting, recording and displaying images in a wide range of formats. Because of its modular construction, RasterLink allows for easy addition of future file conversion routines.

RasterLink's user interface is intuitive. A single screen gives you access to all available options. Once you select the source and destination formats (such as TARGA to TIFF), the program is intelligent enough to automatically default to the most appropriate options. I used these defaults to produce a reference image. I then experimented by changing a few options, comparing the results to the reference image. Varying option settings helped me to get best possible results.

The other options influence the final image color, the type of dithering, the method of compression and any necessary scaling of the image. Adjusting other values can affect the aspect ratio, color mapping and image offsets. Because changes made to default settings can produce different results depending on the formats involved, practical experience is essential for getting the most from this package.

The list of supported formats includes both PICT and TIFF. These are the formats most useful to those outputting to the Macintosh; others will be useful with other machines. RasterLink's ease of use and wide selection of formats makes it a valuable tool.

ADPro is the most powerful image-processing package available for the Amiga. When combined with ASDG's Professional Conversion Pack, its file conversion abilities are extensive. It even offers some that RasterLink lacks. It also

supports several popular frame buffers and can be used for color separations. Bear in mind, however, that file conversion is only one aspect of this excellent package. While RasterLink's focus is on converting files, Art Department Professional can be used to modify a wide range of image characteristics. Because the images I was working with were complete, I only used ADPro to make one simple change. At first I thought the original images contained only two colors, black and white. Apparently, the colors were not absolutely pure, and Photoshop thus saw them as grayscale images. This resulted in 4-5 K IFF files being expanded to about 60 K each as PICT files. By using ADPro to make certain of the purity of the colors, I was able to convince Photoshop to recognize the images correctly.

Simple file conversion may not always give the expected result. The important advantage that ADPro offers is its range of image-processing tools. Often the quality of the final image can be greatly improved by judicious use of these tools. Its ability to adjust an image's brightness and contrast, to convert from color to grayscale and to rescale an image are just a few of its features. Like RasterLink, ADPro is structured so that the addition of new conversion formats is automatic.

DOING IT YOURSELF

Relying on the default settings of these programs will often work well. But to ensure the best results, be prepared to experiment. Don't make just one conversion, make several using different options. Bitmapped images are complex, and the more you understand about the effect of various options, the more certain your success will be.

The ideal way to learn to use these packages would be to have a Mac II and an Amiga sitting side by side. If you cannot arrange to see the final result of your conversion immediately, be prepared to ask detailed questions about what is expected by clients. The clearer you are on the final image, the less time you will need to achieve the desired result. Take the time to save several copies of the image, varying those options you have questions about. Plan ahead for the necessary learning curve.

Building bridges between platforms is important to all users. For those with less widely used systems, it is essential. The degree of success that can be achieved is remarkable. The Amiga–Mac connection is only one of the bridges that needs to be constructed; another important one is with the world of MS-DOS. Watch for coverage of this in a future issue. Please take the time to write to us about your own bridge building. Share with us both your successes and failures. All of us will benefit from your experience.

RESOURCES

AMAX II

ReadySoft 30 Wertheim Ct., Unit 2 Richmond Hill, ONT, Canada L4B 1B9 416-731-4175

The Animation Studio

Walt Disney Computer Software, Inc. 500 S. Buena Vista St. Burbank, CA 91521 818-567-5360

Art Department Professional

ASDG 925 Stewart St. Madison, WI 53713 608-273-6585

DoubleTalk

Progressive Peripherals 464 Klamath St. Denver, CO 80204 303-825-4144

MAC-2-DOS

Central Coast Software P.O. Box 43167 Austin, TX 78745 512-328-6650

Photoshop

Adobe Systems, Inc. P.O. Box 7900 Mountain View, CA 94039-7900 800-344-8335

RasterLink

Active Circuits, Inc. 1985 Highway 34, A-4 Wall, NJ 07719 201-974-1616

SoftPC

Insignia Solutions 526 Clyde Ave. Mountain View, CA 94043 415-694-7600 Neomedia:

GEL2 SEYT

SEARCH for the secrets of desktop video can take one far and wide. In addition to a smattering of desktop video products, last summer's Consumer Electronics show in Chicago revealed solar-powered house numbers, a turntable that play both CDs and 8" vinyl, and even a frisbee that blind Fido can

One might say that all these products symbolize the quintessential theme of the 90s: convergence. Solar power and communications. Vinyl records and CDs. Dogs and digital frisbees.

find—one that plays digital sound

effects as it zeroes in on its target.

Though some might argue that these integrations are serious bell-wethers of change, we can abstract far more sober forms of convergence to illuminate the theme of this issue: Input/Output. Consider the continuing convergence of computers and television, for example, a theme that has anchored a majority of previous Neomedia columns. Or consider the marriage of personal computers and video.

A Little

Vidi-History

The dream of marrying computers and video has been around since the computer's first tentative steps to the desktop. Perhaps this relationship was inevitable, given the CRT's role as a projection system for both. As likely, the evolution of computing and video has arisen from the advent of a desktop computing paradigm that has led users to think that whatever "others" could do on a mainframe—or any other equally dedicated, standalone system —"I" eventually could do on a PC. The recent integration of video into the personal

computing product mix is no exception.

The "first wave" of video computing was launched just after the summer of '67. Ampex's Chuck Colby married computer control to several VTRs to create a video editor for CBS's coverage of the 1968 Grenoble Olympics. By applying the interactive control afforded by dedicated microprocessors to the manipulation of standalone VTR peripherals, Ampex helped forever merge the worlds of computers and media production.

More abundant are examples of the PC-based "second wave" of video computing. These consist of professional, task-oriented applications built principally to run on both the multimedia-designed Amiga and the exponentially proliferating IBM PC. Programs for scripting, storyboarding, budgeting and planning, edit-list management, MIDI, audio and video editing, and graphic generation have been developed over the last four or five years to support the administrative and creative tasks that dedicated high-end products didn't serve and to take advantage of the declining cost and increasing power of the personal computer.

Early limitations to these second wave systems were their lack of displays and of an interface standardized across applications, their lack of a standardized protocol for integrating applicationsparticularly in the case of the IBM PC-and, in general, a limited degree of acceptance on the part of their targeted community. While these limitations are slowly being rectified, they continue to undermine the Amiga's and IBM PC's ability to serve as "integrators" to the greater concept of the "production suite." The notion of integration is vital to the adaptation of the personal computer as the basis for a new class of production technologies.

The "third wave" of video computing directly embraces this notion of "interface-based integration." Presaged by the advent of desktop publishing (launched by the marriage of laser printer, Post-Script, PageMaker, and the Macintosh's highly intuitive graphical interface, enabling highquality print and graphics output across a number of multivendor programs), the term "desktop video" speaks of the integration of specialized video production skills and equipment within the context of the kind of easy-to-learn and use "point-and-click" graphical interface popularized by the Macintosh. The third wave of video computing implies an ease of use, cost and level of integration not possible within previous computing and interface paradigms.

Overview and Directory of Macintosh-Based Desktop Video

Hardware by Category

Today a wide variety of third wave desktop video products are serving the Macintosh, Amiga and IBM in their race to embrace integrated video computing. Some are wholly software or hardware based, others a combination. To a lesser or greater extent, each of these products enables its host computer to fulfill some of the functionality of an integrated production suite. Yet while there are exceptions, the Macintosh-based products remain ahead of their Amiga and IBM counterparts because of the continued advantage

of the Macintosh's universal interface, its original design as a graphics computer, and significantly, the number of Macintosh-directed multimedia products that far outweigh the number of similar products for the other two systems.

I have therefore chosen to use this article as an opportunity to provide a brief overview of Macintosh-only video products. Moreover, it focuses only on hardware, leaving the software-oriented "how-to" to subsequent issues. finally, it avoids all but the most topical feature comparisons among the individual products represented in the survey.

The following overview is intended as a preliminary resource to help you get an idea of what exists for each category of video hardware and which companies provide products for that category. The categories of PC-based video products addressed here include motion video display, digitizers, frame grabbers, video overlay, encoding/decoding and scan converters, machine control and compression.

MOTION VIDEO DISPLAY

Perhaps the most exciting of the video hardware categories is motion video display, which comprises a class of board products that enable Macintosh users to display one or several windows of live-motion video from a television broadcast, VCR or other video source on their computer display. It also portrays the original metaphor upon which this entire revolution has been based: the marriage of computers and television. This class of products exemplifies where video computing is going.

The products listed below vary in terms of special features (e.g., Radius's RadiusTV board provides a TV tuner that not only captures television but also closed captioning information; Workstation Technology's Moonraker board can simultaneously display two synchronous video signals). Yet each is able to display live-motion video.

- Aaps Technology's DigiVideo Color Board (TV tuner, digitizer, works with 8-, 24-bit display card)
- ▶ Computer Sciences's VideoDesk



1/24 (24-bit color video, video capture, overlay)

- ▶ E-Machines's Quickview Studio (live-motion video, digital effects, record and replay of images)
- ▶ Mass Microsystems's Colorspace FX (live-motion, 24-bit color video [captures with Colorspace IIi board])
- ▶ New Media Graphics's Video-Windows HR (live-motion video, overlay)
- Orange Micro's Personal Vision (24-bit [15 fps] video [works with NTSC decoder], video capture)
- ▶ Radius, Inc.'s Radius TV(TV tuner, video input selector, S/FX, decodes closed captioning information)
- ▶ RasterOps's ColorBoard 364 (24-bit color video, frame grabber, live-motion display)
- ▶ Videologic's DVA-4000 (24-bit color, PAL and NTSC input, overlay)
- ▶ Workstation Technology's Moonraker Board (multiple livemotion video display)

DIGITIZERS

Digitization is the non-real-time process by which users can import images to the PC from a video camera or other video source. While digitization is the least expensive means for grabbing an image, it is the most time consuming, sometimes taking as long as 25 seconds. And because digitizing is not a real-time process, it is often useless for moving subjects. Finally, because digitization is not a precise process, it often requires the user to employ some type of dedicated image-processing software to touch up the image before it is sent to print. Examples of digitizers include:

- ▶ Computer Friends's ColorSnap 32 Color Digitizer Board (8-, 24-bit color)
- ▶ Computer Friends's ColorSnap 32+ Color Digitizer Board (8-, 24-bit, real-time operation)
- Digital Vision's Computer Eyes (B&W, connects to serial port)
- Digital Vision's Computer Eyes Professional (8-, 24-bit color, connects to serial port)
- ▶ Koala Technologies's MacVision Video Digitizer (External B&W, connects to serial port)

FRAME GRABBERS

The next level of frame-capture technology is the product known as the "frame grabber." Unlike digitization products, frame grabbers can capture an image in 1/30 of a second. However, most frame grabbers are unable to display the live-motion video from which they are drawing. The exception are systems such as RasterOps's Color-Board 364 board and Computer Science's VideoDesk 1/24 board, which use live-motion video capabilities on their circuitry. Examples of frame grabbers include:

- ▶ Advent Computer Products's Neotech Image Grabber (Mac II, 8-bit video frame grabber)
- ▶ Computer Friends's ColorSnap32+ Color Digitizer Board (8-,24-bit, real-time operation)
- ▶ Computer Sciences's VideoDesk 1/24 (24-bit color video, video frame grabbing, overlay)

▶ Data Translation's ColorCapture Board (1/30 second 24-bit color digitizing)

Data Translation's Quick-Capture (1/30 second B&W frame grabbing; quick digitizing of color)

▶ Mass Microsystems's Quick-Image 24 Board (24-bit color, 8-bit grayscale)

• Orange Micro's Personal Vision (24-bit [15 fps] video [works with NTSC decoder], video capture)

▶ Perceptics's NuVision Board (24-bit, for scientific applications)

▶ RasterOps's Color Board 364 (1/30 second 24-bit color digitizing, live-motion display)

▶ RasterOps's FrameGrabber 324NC (1/30 second 24-bit color digitizing)

▶ Scion Image Systems's Scion Image Capture Board (1/30 second 24-bit color digitizing)

▶ TrueVision's NuVista Board

(24-bit, 1/30 second frame grabbing)

Workstation Technology's Moonraker Board (24-bit color capture, live-motion video display)

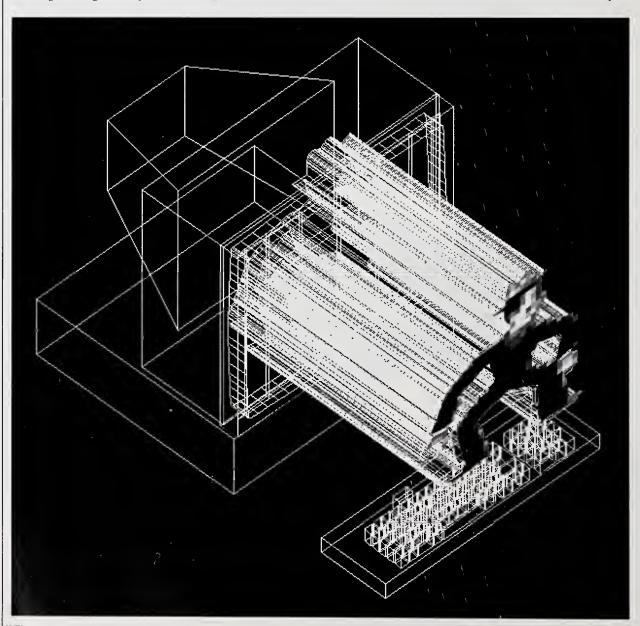
VIDEO OVERLAY

After capturing an image, you may want to integrate it with titles or other graphic images exported from another application in your computer. To do so you need a hardware-software configuration that will enable you to overlay graphics on your video. The board you will require is one with video overlay capabilities, such as:

▶ Computer Friends's TV Producer Pro (enables 8-bit overlays)

▶ Computer Friends's TV Producer RGB (enables 8-bit overlays)

▶ Mass Microsystems's Colorspace Plus/SE Board (allows Mac plus and SE to do three-color overlay)



- ▶ Mass Microsystems's Colorspace IIi Board (works with Colorspace FX to enable overlay)
- RasterOps's SFX Option Board (combines with ColorBoard 264 to enable video overlay)
- ▶ Specialized Computer Service's Genlock Converter (works with Macintosh II only)

ENCODING/DECODING AND SCAN CONVERTERS

Once you've married computer graphics to digitized or framegrabbed images, the next logical step would seem to be to output those images to tape or video display. Prior to this step you must first convert the computer-based RGB signals into component or composite video signals. There are three ways to enable this conversion: plug in a card that automatically encodes a composite or component video-rate signal equivalent to the original computer signal, use an external encoder unit capable of facilitating the same thing, or, at the high end, use an external scan converter that converts RBG signals to NTSC signals. While the card-based solution is fast becoming the most popular solution, in part because of the increasing demand for easy-to-use presentation products that enable video overlay, the following all represent solutions:

- Advent Computer Products's Neotech Color Video Encoder (external encoder with NTSC, S-Video, RGB)
- ▶ Computer Video's TV Encoder (supports displays from Apple, RasterOps, SuperMac, True-Vision)
- Data Translation's DT2879 (encoder and decoder in both PAL and NTSC version)
- ▶ Lapis Technologies's Display Server SE Card (TV option allows SE to convert B&W output)
- ▶ Lyon Lamb's ENC-7 (broadcastquality encoder with syncgenerator)
- Lyon Lamb's RTC (real-time scan converter)
- Mass Microsystems's Easy Video 8 (reduced-flicker NTSC output via video output buffer/encoder)
- ▶ Perceptics's NuVision Image Processor (scan converter)
- RasterOps's Video Expander (works with new Apple cards and RasterOps's ColorBoard 324)

It becomes increasingly difficult <u>not</u> to see the convergence of computers and television, no matter where your vantage point.

- ▶ RGB Technology's RGB/Videolink 600A (scan converter)
- ▶ RGB Technology's RGB/Videolink 600AX (scan converter, plus video mixing and overlay)
- ▶ Sigma Electronics's Integrated Graphics Module 2.0 (broadcastquality encoder/decoder)
- ▶ Specialized Computer Services's NTSC Converter (NTSC output)
- ▶ TrueVision's VIDI/O Box (provides composite and S-Video decoding as well)
- ▶ VideoLogic's Mediator (converts RGB to NTSC or PAL composite, S-video, S-VHS, Hi-8, VHS)
- ▶ YEM America's Real-Time Scan Converters

MACHINE CONTROL

In addition to live-motion video viewing, the other sexy part of video computing is no doubt machine control, particularly for editing. Why? Three reasons: (1) because editing has classically stood at the center of production's ivory tower; (2) because both multiple machine-control tasks such as editing, and single machine-control tasks such as animation recording and edit decision list tape review, are optimally suited to machine control; and (3) because it is through machine control that the essence of the third wave of video computing might be realized: the user-friendly integration of a multiplicity of production activities through a single personal computer's interface. Products providing various types of machine control include:

- Advanced Digital Imaging's MacVac Video Animation Controller (with boards, controls animation)
- ▶ ARTI's ARNET Network (machine control of numerous device nodes for editing, animation, etc.)
- Avid Technology 's Avid/1 Media Composer (integrated nonlinear editor that digitizes footage)
- Diaquest's DQ ANIMAQ software (frame-accurate digitizing, animation machine controller)
- Digital F/X's Video F/X Desktop Video Production System (integrated editing and graphics system)
- IMT's IMTX 8000 Media Integrator (stand-alone system with up to ten machine-control modules)
- ▶ Lyon Lamb's MiniVas (frame accurate, external serial and parallel single machine controller)
- ▶ MacroMind's MediaMaker Presentations Software (enables picon-based editing of A/V bytes)
- ▶ NEC's S-VHS/VHS PC-VCR recorder (Mac-driven [serial port], frame-accurate indexing, editing)
- ▶ NEC's VUES System (editing system that allows complex multilayer composites stored in RAM)
- ▶ Panasonics's EC4044 rewritable VD recorder (takes RGB, composite, S-Video images for editing)
- Sony's CRVdisc recorder (records component and RGB [via encoder] graphic images for editing)
- ▶ Sony's Vbox controller (interface allows users SW control of Sony consumer video peripherals)
- ▶ Specialized Computer Services's EditWorx (picture-based A/B roll editing system)
- ▶ Teac's LV-250HC videodisc recorder (records component and RGB images [via encoder] for editing)
- ▶ VideoMedia's V-LAN Network (machine-control core to editing, animation, presentation systems)

While all of the above products represent the use of hardware and machine control to facilitate the development of integrated production suites—particularly in the case of Avid's Media Composer and Digital F/X's Desktop Video Production System—Macro-Mind's MediaMaker package deserves particular mention. This relatively inexpensive software-

only product enables nonprofessional videographers to link video scenes and audio bytes for later playback via the use of grabable picons representing both video and audio that will later serve to control the appropriate machinery to play back and record the sequence of video and audio bytes as requested. While targeted to the consumer and "prosumer" video and presentations market versus the professional videography and presentation market, MediaMaker is coming to epitomize the ultimate promise of the third wave of video computing: easy-to-use, graphically based integrated media production and presentation tools that enable nearly anyone to sculpt the media of their choice to their expressive satisfaction. As a bonus, the MediaMaker manual offers a good overview of the various activities and hardware configurations you might use in your efforts to produce desktop videoa real educational asset.

COMPRESSION

And now, finally, compression. While a bit premature as a product area for most users, compression/ decompression is an area of video I/O that should be examined by personal computer users interested in video. Products that enable the rapid compression and decompression of color still and full-motion images will soon become one of the hottest areas of computing. One of the ultimate goals of this area will be the ability to record or play back video directly from the hard disk or other storage device. Whether it is still images or motion you wish to compress, you will need special compression boards (or in several cases, compression software) that allow for the enhanced compression and decompression of video images.

Increasingly, still image compression will be realized according to the evolving JPEG (Joint Photographic Experts Group) standard—a process by which an RGB image is broken down into values of luminance and chrominance, then further decompressed into 8 x 8-pixel images that can be processed and categorized with a mathematical operation known as

a discrete cosine transform, which shrinks the whole image down to a handful of bits that are able to encode the visual characteristics of the entire image.

Compression and decompression of motion images will likely occur according to the MPEG standard now under development by the International Standards Organization (ISO). Like JPEG, an MPEG-based operation will first parse, then compress a series of images via the mathematics of a discrete cosine transform. However, unlike the compression of still images, which require a compression ratio of only 25:1, video compression will have to succeed at factors of nearly 100:1. As such, live-video motion compression will likely use methods that bypass the full compression of each moving still for the compression of multiple images via the measurement and analysis of similarities between subsequent frames. Hardware and software packages for color image compression include:

- ▶ Advent Computer Products's Neotech Image Compressor Board
- ▶ C-Cube Microsystems's C-Cube Compression Master board and chip set
- ▶ Eastman Kodak's Colorsqueeze software package
- ▶ Storm Technology's Picture Press software product
- ▶ Storm Technology's Picture Press Accelerator board
- **▶** SuperMac Technology's Super-Squeeze software product

Television and

Computers United

It becomes increasingly difficult not to see the convergence of computers and television, no matter where your vantage point. If you are a fan of the Macintosh, you've likely seen the impending release of Apple's Quicktime media manager (coordinating the input, output and manipulation of sound, video, animation, text, graphics and animation) as Apple's intent to ensure that its computers will realize complete facility with video—and continued dominance in the field of

video computing. You might also learn from Claris's attempt to integrate their product line—the notion of convergence remains key.

If you are a fan of the Amiga, NewTek's inexpensive Video Toaster is of course the answer to your prayers. It serves as absolutely exemplary of what an integrated Amiga-or any PC- or Macbased—production suite should employ. It shows that the field of desktop video is getting smaller particularly as the high-end vendors realize that their days are truly numbered. The EMC2 integrated editing product line has likely had a similar impact upon the IBM community.

Even if you're a fan of none of the above but instead, for example, are following the saga of HDTV, you might come to anticipate how the digital CRT will soon unite the television and computer as they ought truly be united: two discrete information types easily suited to a single medium of delivery.

So finally, as in columns past, I close with the bottom line. Sure, the Macintosh and its competitors are quickly integrating their capabilities within the field of video production. And certainly a wide variety of video vendors are doing their best to reciprocate. Yet while the number of hardware and software solutions facilitating PCbased video production will continue to grow exponentially, one factor will always stay consistent: the factor of creativity.

Perhaps the best advice on all this video computing stuff is to take it slowly—to watch it happen, keep familiar, and focus on developing the assets that may never change, such as the ability to tell a story, build believable characters or draw meaningful storyboardsthe assets of creativity. Learn first how to cleanly capture your own imagination, so that when the tools finally do arrive that are both logical and affordable to implement and easy to use, you'll know where you want to go.

RESOURCES

Aaps Technology

756 N. Pastoria Ave. Sunnyvale, CA 94086 408-735-8550

Advanced Digital Imaging

22 Rocky Knoll Irvine, CA 92715 714-725-0154

Advent Computer **Products**

449 Santa Fe Dr. Suite 213 Encinitas, CA 92024 619-942-8456

ARTI

307 Orchard City Dr. Suite 204 Campbell, CA 95008 408-374-9044

Avid Technology

175 Bedford St. Burlington, MA 01803 617-272-1680

C-Cube Microsystems

399 West Trimble Rd. Suite A San Jose, CA 95131 408-944-6300

Computer Friends

14250 N.W. Science Park Dr. Portland, OR 97229 503-626-2291

Computer Sciences

102 Executive Dr., Suite 5 Moorestown, NJ 08057 609-234-1166

Computer Video

215 Salem St., Suite 5 Woburn, MA 01801 617-937-0888

Data Translation

100 Locke Dr. Marlboro, MA 01752 508-481-3700

Diaguest

1440 San Pablo Ave. Berkeley, CA 94702 415-527-7167

Digital F/X

755 Ravendale Dr. Mountain View, CA 94043 415-961-2800

Digital Vision

270 Bridge St. Dedham, MA 02026 617-329-5400

Eastman Kodak

343 State St. Rochester, NY 14656 716-724-4000

E-Machines

9305 S.W. Gemini Dr. Beaverton, OR 97005 503-646-6699

7320 East Butherus Suite 200 Scottsdale, AZ 85260 602-443-3093

Koala Technologies

70 N. Second St. San Jose, CA 95113 408-287-6278

Lapis Technologies

1210 Marina Village Pkwy. Suite 100 Alameda, CA 94501 415-748-1600

Lyon Lamb

4531 Empire Ave. Burbank, CA 91505 818-843-4831

MacroMind

410 Townsend, Suite 408 San Francisco, CA 94107 415-442-0200

Mass Microsystems

810 West Maude Ave. Sunnyvale, CA 94086 408-522-1200

NEC America

383 Omni Dr. Richardson, TX 7508 214-907-4710

New Media Graphics

780 Boston Rd. Billerica, MA 01821 508-663-0666

Orange Micro

1400 North Lakeview Ave. Anaheim, CA 92807 800-223-8029

Panasonic

1 Panasonic Way Secaucus, NJ 07094 201-348-7736

Perceptics

725 Pellissippi Pkwy. Knoxville, TN 37922 615-966-9200

Radius, Inc.

1710 Fortune Dr. San Jose, CA 95131 408-434-1010

RasterOps

2500 Walsh Ave. Santa Clara, CA 95051 408-562-4200

RGB Technology

2550 Ninth St. Berkeley CA 94710 415-848-0971

Scion Image Systems

3 N. Main St. Walkersville, MD 21793 301-845-4045

Sigma Electronics

1184 Enterprise Rd. P.O. Box 448 East Petersburg, PA 17520 717-569-2681

Sonv

1600 Queen Anne Rd. Teaneck, NJ 07666 201-833-5261

Specialized Computer Service

4016 Quartz Dr. Santa Rosa, CA 95405 707-539-9003

Storm Technology

220 California Ave. Suite 101 Palo Alto, CA 94306 415-322-0506

SuperMac Technology

485 Potrero Ave. Sunnyvale, CA 94086 408-245-2202

Teac

733 Telegraph Rd. Montebello, CA 90640 213-726-0303

TrueVision

340 Shadeland Station Indianapolis, IN 46256 317-841-0332

VideoLogic

245 First St. Cambridge, MA 02142 617-494-0530

VideoMedia

211 Weddell Dr. Sunnyvale, CA 94089 408-745-1700

Workstation **Technology**

18004 Skypark Circle Suite 240 Irvine, CA 92714 714-250-8983

YEM America, Inc. 19951 Mariner Ave.

Torrance, CA 90503 213-793-1288



Introducing the RAVEN Series. The First Macintosh Disk Array With 5.7 ms Average Access and 4.1 MB/sec Sustained Transfers.

You may be wondering just how fast 4.1 MBytes per second really is. Well here's the bottom line--the RAVEN is so fast, you can now accomplish I/O intensive applications such as animation and graphic design, three times faster than you've ever been able to before! We're not talking about small cache bursts here, but real honest to goodness sustained data transfers.

The RAVEN also gives you incredible disk array power. MicroNet starts with a pair of high speed spindle hard disk drives. Then we maximize the Macintosh NuBus by connecting them in parallel to a pair of MicroNet NuPORT, SCSI-2, synchronous host adapters. What we've created is a very powerful 16-bit disk array subsystem. Capacities range from 606 to 2,500 MB with average access times as fast as 5.7 ms. The RAVEN also makes fault tolerant RAID technology possible for the Macintosh II family, ensuring real-time data integrity.

By now you're probably wondering what else the RAVEN and our other unique SCSI storage products can offer you. Give us a call today. We'd love to tell you all about our RAVENous storage systems. 1-714-837-6033.



MicroNet Technology, Inc.



Jessica Remembers
Rivermede
Michael Cinque
New Jersey photographer
Michael Cinque manipulates
his photos in ColorStudio on a
Mac Iffx after scanning the 35mm
slides or black-and-white prints
directly into the program using
the ColorStudio scanner drivers.
A graduate of the School of
Visual Arts in New York City,
Cinque is currently employed by
Letraset GDS as a QA imaging
specialist.







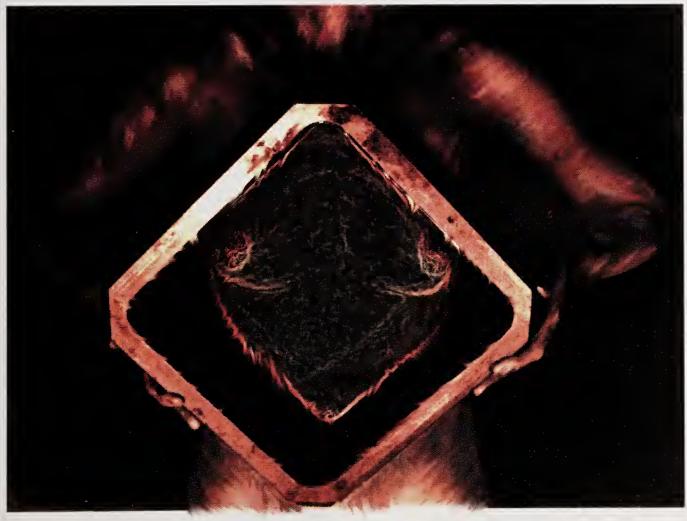
Bruce The Passengers

DMSKY **Melissa C. Beckman**

All of Melissa Beckman's artwork is based on her blackwork is based on her black-and-white photos. "DMSKY," one of three in a series, was originally composited in ImageStudio, Digital Dark-room and Studio/8. It was then brought into Photoshop to color the man and tint the background. An exhibiting artist for 12 years, Beckman is currently a freelance photo illustrator in New York City.







D.P.'s Room, or
"As It Seems Always
in Time"
The original black-and-white
photo was input via MacVision, then painted in
Studio/8. The artist brought it
into Photoshop to blend only
some of the colors on the
woman's torso.

Breast Ballows 3

Breast Bellows 3
The original 4" x 5" photo was scanned at 300 dpi, then the image was painted in Photoshop. It is one of a six-image series.

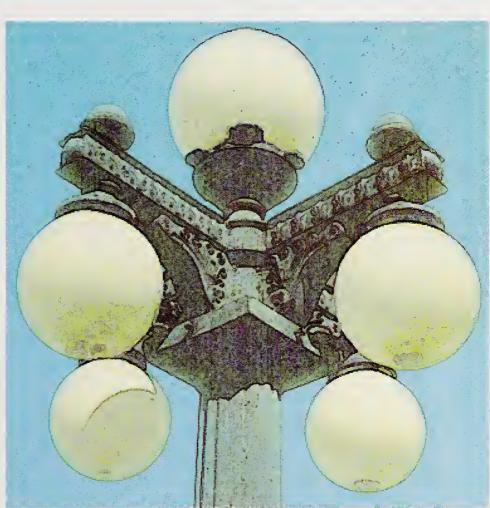


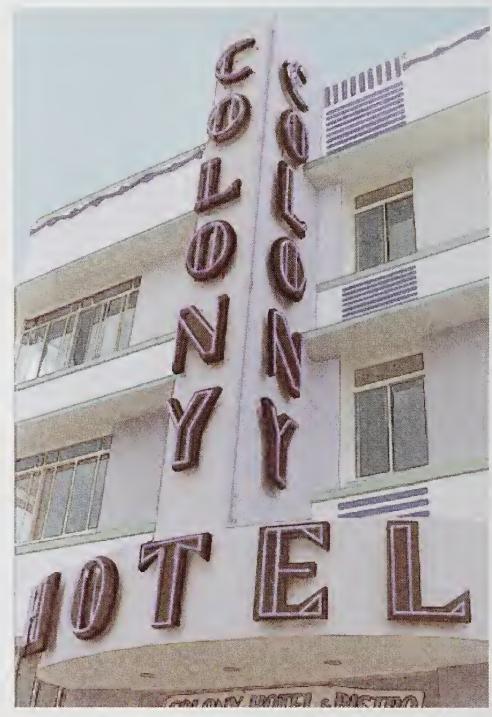


Palazzio di Florenze Ybor City (detail) Mark Gould

Mark Gould

A Tampa, Florida-based graphic designer,
Mark Gould scans photos and manipulates
them in Photoshop and ColorStudio. For output,
all files are imaged to an Agfa Matrix QCR-Z
film recorder. "Palazzio di Florenze" was
traced by hand and redrawn in Freehand.
Gould's interest in computer graphics began
during a former career in television and video
production. Since opening his design studio
four years ago he has worked with PC-based
3D modeling, animation for broadcast and still
video graphics for interactive videodiscs as
well as doing basic design on the Mac. well as doing basic design on the Mac.

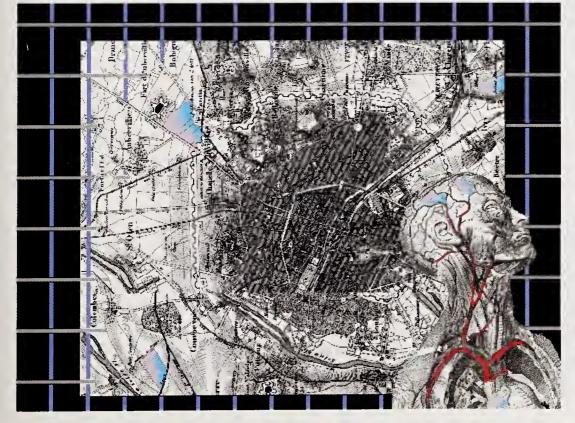




Colony Hotel
Matty the Dog
Mark Gould
In his choice of colors Mark
Gould gives an unmistakably
Floridian touch to his palette.







Hoboken, New Jersey/ Red Square, Moscow David Chalk

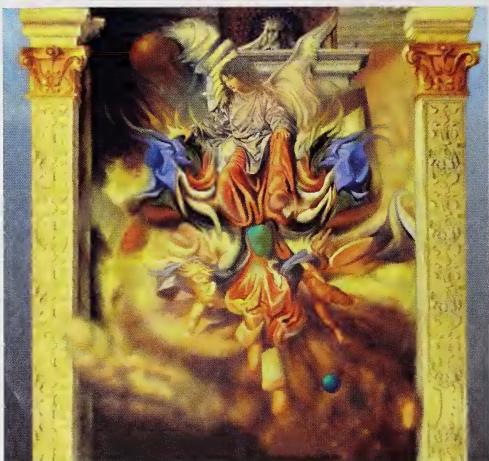
Chalk, a commercial photographer based in New York
City, combined old and new images from his files to make this composite. The Hoboken shot is an 18-year-old black-and-white transparency that Chalk scanned into Photo-shop. The Soviet soldiers were scanned from a recent black-and-white print. He distorted them when he imported them to Photoshop to create the window effect. A longtime advertising and annual reports photographer, Chalk has been working with the Mac for about a year.

Paris Man
To highlight the similarities between road maps and the circulatory system, Chalk scanned a map of Paris and a turn-of-the-century engraving, then added color.

Circus of the Soul
Allen Toney
Working primarily in Photoshop on a Mac Ilcx, Toney, a senior at Marshall University in West Virginia, has used the Smudge and Airbrush tools to produce his own distinct look. His output is either Cibachrome prints from transparencies or large-format ink-jet prints. The figures in this image were digitized from a model in grayscale. Toney then did major reworking and color-ing in Photoshop with the Airbrush and Smudge tools. The sheets were done freehand with the Smudge tool. Angel of the Cross
Being Engulfed in the
Vapors of
Metaphysical
Disunion
Toney digitized the large fig-

ure at the top from a painting by Bellini with very little alteration. The head at the top and the tops of the columns were also taken from Bellini's Renaissance work. The rest was hand rendered with Smudge and Airbrush.







Spirit of the Tempest
This image was completely hand drawn in Photoshop with Smudge and Airbrush, using the twirl filter.

using the twirl filter.

The Three Specters of Flesh, Psychosis and Transcendence

A small comer of a northern Gothic painting (artist unknown) was digitized, then cut up at random and pasted to form a mosaic of light and dark patterns. The artist then completely reworked the image from this basic pattern using the Smudge tool.



<u>Urbana Vita</u> <u>Vehiculum</u>

Wehiculum
Milton Montenegro
Brazilian photographer Milton Montenegro
uses TIPS and custom software on a 286 PC/AT
with a TARGA 16-bit board to manipulate his
scanned color slides. These two images are
from his solo exhibition, "Deceptio Visus." An
award-winning advertising photographer,
Montenegro continues to pursue his personal
work, which has been exhibited internationally and has appeared in such publications as
Zoom, Pixel and Print.



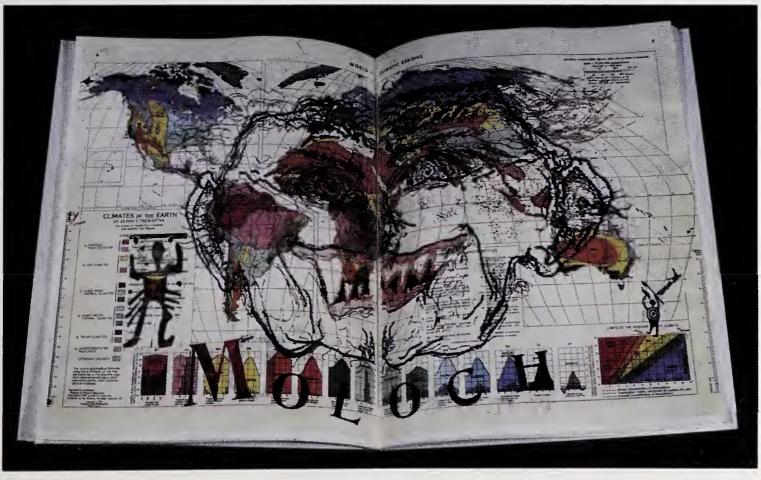




<u>Lexicon</u> <u>Moloch</u>

Lane Hall

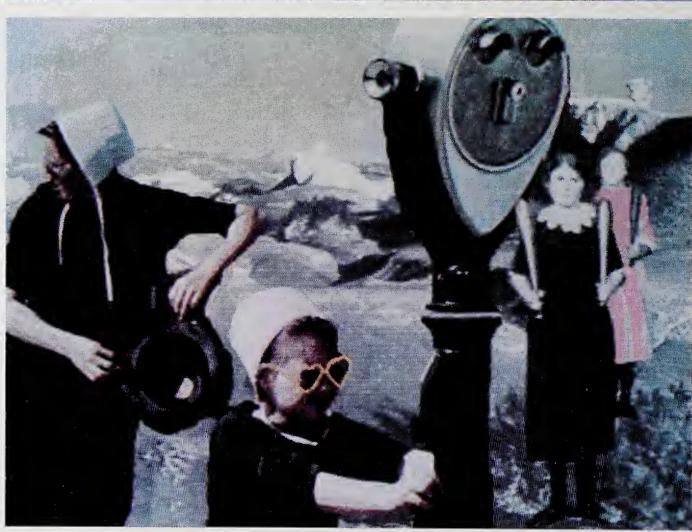
Lane Hall takes apart old books, superimposes images on the pages using computers and more traditional printmaking processes (including lithography, letterpress and rubber stamps) and then rebinds them to look like "real" library books. "Moloch" was done in collaboration with Hall's wife, Lisa Moline. A former graphic designer and home restorer, Hall is currently an MFA candidate at the University of Wisconsin-Madison; his work has been exhibited in a number of galleries in the Midwest and is in the SIG-**GRAPH Traveling Exhibition.**

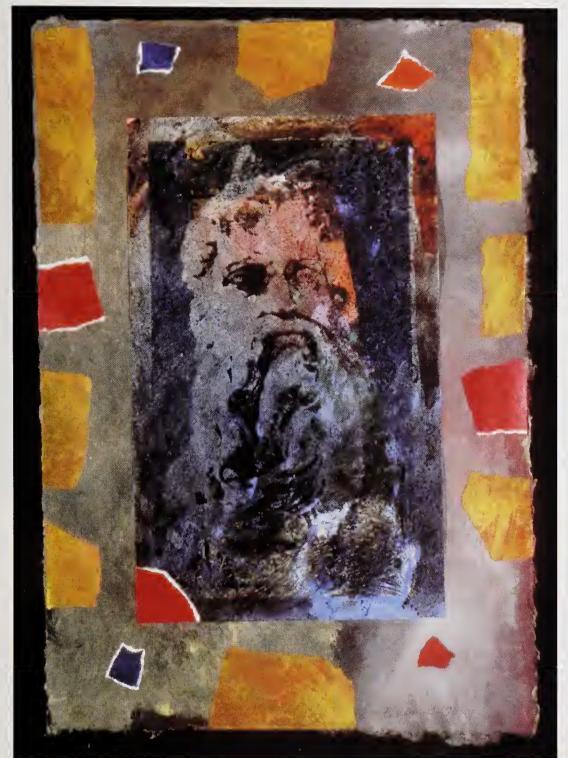




Beyond the Normal
Range of Experience
Looking over the
Dead Sea from
Niagara Falls
Hagit Cohen
"Hovering at a Low Altitude"
is the overall title for Cohen's

is the overall title for Cohen's series of pieces that repre-sent a personal statement about the contemporary political situation in Israel.
'The title refers to a way of seeing—a kind of detached observation on terrible events happening around us." Cohen creates the images by combining pictures from magazines and books with her own photos, using the Artronics computer system. The final images are photographed directly from the computer screen on color negative film and printed on 30" x 40" color paper.





Shattered Moses Faces of Golem Bob Barancik

Barancik produced these pieces for a Millersville University show dealing with the Holocaust. He feels that there is "a real need to create new symbols and images that will connect the postwar generations to those millions of Jews who perished because of blind hatred and public apathy." He produces his works by arranging scanned black-and-white photos in PageMaker, then hand coloring laser prints with Letraset color tag strips and light-fast inks. The altered images are then used as collage elements. Barancik is a Philadelphiabased specialist in publications design and marketing communications.

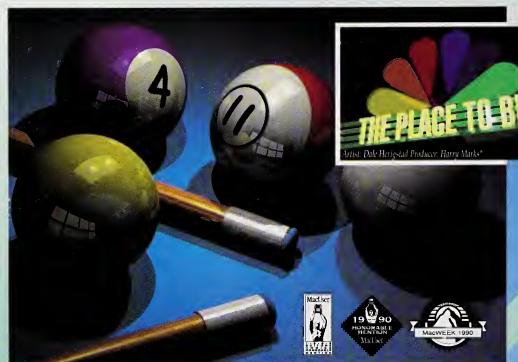


Paragon of Distraction Greg Vander Houwen

This image began as a composite of two photos, one that provided the background sky (scanned on a Nikon LS3500) and another of the artist's arm (scanned on an HP ScanJet Plus). The photos were combined and enhanced in Photoshop. The water was a duplicated sky with some color correction and filtration. A wire-frame ring was created in StrataVision 3d and assigned a metal attribute with a gold base color. The Photoshop elements were imported into Strata-Vision 3d to improve the reflections, and then the image was returned to Photoshop for final retouching. The image was output as a 35mm slide by an LFR Plus film recorder. Vander Houwen is operations manager at Heath/Zenith in Seattle.



PHOTOREALISM



*Artist: Jon Watson; image modeled and rendered entirely in StrataVision 3d.

trataVision 3d is realistically the best 3D program on the Mac. ■ Already donned with industry awards, there's even greater power with version 2.0. Extended modeling gives you more control over objects. Apply realistic textures, set reflectivity and soften shadows with

improved ease. Animations of linked objects offer stunning results. StrataVision 3d 2.0 also has a realistic price; less than \$699. • Whether you're

an illustrator, a designer or a tinkerer, we have the realistic solution. Call toll-free 1-800-869-6855 today.

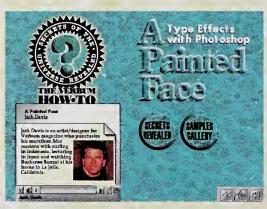


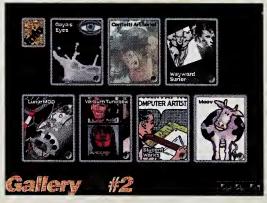
The Virtual Studio™ Company.

Strata, Inc. / 2 West St. George Blvd., Suite 2100 / St. George, UT 84770
1-800-869-6855 ext. 400

*Strata Vision 3d created the NBC image for animation storyboards. Strata Vision, and Strata Vision, 3d are trademarks of Strata, In







TAKE THE JOURNEY.

Verbum Interactive is shipping *now.*Call 619-233-9977 for your copy of the future.



2-disc set only \$49.95

Animation

ElectricImage Animation System (EIAS)

(for the Mac) Film, video, CAD rendering, product and scientific visualization and slide making are just some of the uses for the new EIAS animation production tool. Rendering features include texture, reflection and bump maps, antialiased wireframes, flat, Gouraud and Phong shading, fog and depth cuing and rotoscoping of stills and sequences, Cinemagraphic tools allow simulation of real cameras and lighting, lights and spotlights with drop off, and digital compositing. Real-time motion preview and playback, spline-controlled motion, animated texture mapping and other features are provided. The system supports a wide range of tape controllers, as well as PICT, PICS and TARGA file formats. Requires a Mac IIsi or higher with a floating point coprocessor, 4 MB of RAM and an 80 MB hard disk. \$7,495. Electric Image Inc., 9690 Telstar Ave., Suite 225, El Monte, CA 91731. 818-444-1819.

Clip Art

Backgrounds for Multimedia

(for the Mac) Artbeats is shipping its new collection of 40 computer-generated color background images for use with desktop presentations, slides, 3D modeling programs, animation or video. The collection comes in both 3.5" floppy-disk (14 disks) and CD-ROM versions. \$289. Artbeats, P.O. Box 20083, San Bernardino, CA 92404.714-881-1200.



🐐 File Edit View Element Type Attributes

🛮 Ad layout 📱 9 99 31 64 9 529 55 500 25 299 27 309 338 369 399 429 455 498 551 549 57 50 639 666 659 72 75 750 651 649 677 509 N A Colors We Plant the World at Y Black land gol.

dk blue Styles Normal Ork leaf Lt Leaf White FI land shadow ⊒ Layers **∠** Guides Text Flowers √Flower ba /Map

New Frontier

laterial Texture Library

(for the Amiga) The Material Texture Library consists of full-color images of various materials' textures. The textures may be used with a variety of 3D rendering, painting and video applications to enhance appearance. Each texture image is presented in full color 704 x 480 HAM resolution. Volume I presents a variety of Stone Surfaces. Volume II presents wood surfaces. Each package includes five diskettes of 15 full-color textures. \$49.95 each, Micro-Search, 9896 Southwest Freeway, Houston, TX 77074. 713-988-2818.

Color Displays

Radius Color Display/21

(for the Mac) Radius's new entry in the color monitor market is its 21" high-resolution display that will retail for \$4,495. The display will work with the full line of Radius color display interfaces and the Kodak Precision color calibrator. Radius Inc., 1710 Fortune Dr., San Jose, CA 95131. 408-434-1010.

SuperMatch Displays

(for the Mac) SuperMac Technology has announced two new displays, the 19" Super-Match Color Display and the 21" SuperMatch Two-Page Color Display, priced at \$2,800 and \$4.400 respectively. Both are optimized for use with the company's Super-Match Professional Color Matching System. Super-Mac Technology, 485 Potrero Ave., Sunnyvale, CA 94086. 408-245-2202.



Drawing

Aldus FreeHand 3.0

(for the Mac) Meeting the challenge of Adobe Illustrator 3.0 (see Verbum 4.3), Aldus has brought out the latest version of its own drawing program. Like its competitor, FreeHand 3.0 comes with a new, easierto-use interface. New features include movable on-screen palettes that list the line and fill colors, graphic styles and layers that artists use when creating illustrations. A powerful new feature that has been seen in page-layout programs but not graphics programs is "Styles." A user can now create a specific graphic style by combining colors, lines, fills and halftone-screen effects that can then be applied to other illustrations. One advantage FreeHand still has over Illustrator is the ability to work in layers, an advantage strengthened in the 3.0 update.



Performance is faster with the new version.



















Screen redraws are up to five times faster than before. Printing throughput is also faster.

FreeHand 3.0 has builtin separation capabilities for producing output for full process-color separations for all parts of an illustration, including imported 32-bit color TIFF images. Pantone colors are supported for both process and spot colors and tinting. Users can create a library of custom colors for future use. The company recommends a Mac SE/30, lc or Mac II series computer, a hard disk, and 4 MB of RAM, although it will run on smaller configurations. \$595. Aldus Corp., 411 First Ave. So., Seattle, WA 98104-2871. 206-628-6594.

Canvas 3.0

(for the Mac) Going head-to-head with MacDraw Pro, Canvas 3.0 offers 50 new features, including enhanced text handling, object blending, Bezier font outlines, and support for CMYK and Pantone color standards. New graphic design features include object blending from one shape to another, splitting or combining of objects, custom gradient color fills, the ability to edit multiple Bezier curve anchor points simultaneously, EPSF, Illustrator and CGM import/export translators. \$395. Deneba Software, 3305 N.W. 74th Ave., Miami, FL33122. 305-594-6965.

CoreIDRAW 2.0

(for the IBM) One of the IBM world's best draw programs just got better with this major upgrade. A series of special effects highlight the long list of new features. The Envelope tool will distort any shape, text or graphics by allowing users to manipulate the bounding box. Fish-eye views, vertical arching and fitting

text inside a shape are some of the effects that are possible. A Perspective feature gives objects a sense of depth by moving some of the edges farther from the eye than others. The resultant shape is rendered in true mathematical perspective. Extruding gives objects visual depth and a 3D appearance. The Blend feature will generate intermediate shapes and colors between two original objects. Type features include a bigger library of available fonts and the ability to design typefaces by using CorelDRAW as a font editor. New drawing capabilities include the alignment of nodes, important when superimposing the edges of objects that share a common boundary, the addition of pattern fills to the fountain fill feature, and a collection of 35 vector fills and 49 bitmap patterns. The program will support 256 colors. Bundled with the package is Corel-TRACE, a batch-autotracing program. File import/ export capabilities have been expanded, while the clip art library now contains 9 MB of images. Also included in the package is a collection of more than 3000 symbols in 36 different libraries. \$695. Corel Systems Corp., Corel Bldg., 1600 Carling Ave., Ottawa, Ontario, Canada K1Z 8R7. 613-728-8200.

MacDraw Pro

(for the Mac) MacDraw Pro offers 100 new features over previous editions of the software. The most notable new capabilities are its supports for color. Users may now select from built-in colors, gradients, and patterns from popup menus. Menus and palettes are customizable. The program supports the Pantone Matching System. \$399. Claris Corporation, 5201 Patrick Henry Dr., Santa Clara,









CA 95052-8168, 408-987-7000.

Imaging

Cachet

(for the Mac) For users not yet expert with their color imaging, Cachet offers a solution to the often daunting problem of achieving professional color results. This color-editing program lets users attempt to match their own image to a benchmark or reference image that comes with the program. The user has only to tweak a set of image variations generated automatically by the program. The software will ship with a set of images that have been colorcorrected by professionals in the field. There are both printouts and digital versions of each image. Advanced users can directly adjust colors and their values, bypassing the multiple-choice approach. Less than \$1,000. Electronics for Imaging, Inc., 950 Elm Ave., San Bruno, CA 94066. 415-742-3400.

Envision

(for the Mac) ModaCAD, the innovative developer of CAD design programs for the fashion industry, has released Envision, a powerful "21/2D" rendering program that will map surface images without the use of actual 3D wireframe modeling. A 2D

image can be scanned and given 3D topology through the use of a sophisticated A.I. expert system. Supports both 8and 24-bit images.\$1,995. ModaCAD, 1954 Cotner Ave., Los Angeles, CA 90025, 213-312-6632.

Ray Dream Designer

(for the Mac)

This 32-bit color program helps you create photorealistic images. The key to the realism is the capability of lighting complex 3D images from multiple sources and different perspectives. Modeling tools allow creation of spline and Bezier curves, grids and templates, graphical primitives and more. Shading tools support antialias mapping, texture mapping, Phong shading, bump mapping, and other effects. A library of solid textures simulating wood grains, marble and granite provide readymade effects. You can create and view scenes in 3D perspective from different viewpoints. Requires Mac II or SE/30, hard drive, 4 MB of RAM and 32-bit QuickDraw. \$895. Ray Dream, Inc., 320 Grand View Dr., Woodside, CA

Lifestyle

Nada-Chair

94062. 415-851-0942.

Long hours in front of the computer led one of the Verbum staff to buy a Nada-Chair. It's a backsling that folds up into a convenient traveling pouch. The sling wraps around the waist and knees while the user is sitting to provide back support. This support to the spine helps relieve muscle tension and sore backs and necks. Convenient handles make it easy to connect and disconnect. \$35. Nada-Concepts Inc., 842-22nd Ave. S.E., Minneapolis, MN 55414. 800-722-2587.

C

MIDI

Book of MIDI

(for the Mac and IBM) This "book" is really a HyperCard stack that teaches the user about MIDI (musical instrument digital interface), music, computers and synthesizers. Questions addressed by the book include how to set up a studio, MIDI hardware, MIDI software, and a rewritten MIDI specification, \$39.95. Opcode Systems, Inc., 3641 Haven Dr., Suite A, Menlo Park, CA 94025-1010. 415-369-

Output Options

Plottergeist 1.1

(for the Mac) Outputting to plotters from a Mac just got easier with this upgrade to Palomar's chooser-level plotter driver. A wide range of plotters are supported, including Hewlett-Packard's Draft-Master RX, MX, SX, HP 7550 Plus; Ioline's 3500, 3700 and 4000 series pen plotters; and CalComp's Artisan Plus 1023, 1025 and 1026, the 1043DM and the 1044GT. New features include the capability to do continuous plotting on roll-reed plotters and a save-to-disk features that allows the user to take a graphics file across a network to another computer or to a service bureau. \$395. Palomar Software, 2964 Oceanside Blvd., Suite E. P.O. Box 120, Oceanside, CA 92054. 619-721-7000.

Page Makeup

Personal Press

(for the Mac)
Although aimed at the low end of the market,
Silicon Beach's new software offers several innovative features not found in page makeup programs that sell for double the money. Personal

Press is for the user with fairly simple layout needs, eschewing features the advanced designer would expect. For example, it only allows spot color in its layouts. On the plus side is its ease of use. It's a good choice for the variety of design and layout needs expected in the office.

Innovative features include AutoCreate, Proxies and Link Navigator. Auto-Create lets the user take advantage of a library of 32 templates, already formatted documents with empty frames ready to accept text and graphics. Proxies shows the user the result of an action with a small preview imagebefore the action is completed. The user mounts the proxy of a particular format in a dialogue box and then scrolls through the text and graphics, assigning each to a destination frame in the proxy. Once the future document's raw contents have been assigned, the user clicks on a Done button and the program creates the final document complete with formatting. Link Navigator is for users spreading stories over multiple columns and pages, often not contiguous, as in newsletters, magazines and newspapers. \$299. Silicon Beach Software, 9770 Carroll Center Rd., Suite J, San Diego, CA 92126. 619-695-

Painting

PixelPaint Pro 2.0

(for the Mac)
A hot product gets better with an expanded palette of 32-bit color tools. New capabilities include 8-bit masking, tools to adjust brightness, contrast and color, and pressure-sensitive tools to support Wacom's graphics tablets (see *Verbum* 4.2). The latter simulate pencils, brushes, water drop, airbrushes and other manual



tools. Creating color ramps with multiple adjustable anchor points is possible with the Gradient Editor. Backgrounds that simulate textured surfaces such as concrete, linen, slate and other materials are included in a feature called PixelPaper. \$799. Upgrade from Pixel-Paint Pro 1.0 is \$125; from PixelPaint, \$299. Super-Mac Technology, 485 Potrero Ave., Sunnyvale, CA 94086. 408-245-2202.

Publisher's Paintbrush 2.0

(for the IBM) This popular paint program has been optimized for the Windows environment. Users can now manipulate scanned-in grayscale or color images in up to 256 levels. Editing capabilities go beyond the old tools to allow blending, tinting, sharpening and adjusting of colors as well as brightness levels. As before, a full range of drawing tools are available for creating images from scratch, In addition, the package supports a wide variety of graphic file formats, including TIFF, PCX, EPS, BMP, GIF and MSP. The program can now be used to edit any size image, regardless of how much RAM is available, with its improved virtual memory handling. \$495. ZSoft Corp., 450 Franklin Rd., Suite 100, Marietta, GA 30067. 404-428-0008.

Studio/8 2.0

(for the Mac)
This update of the popular paint program is geared to the new Mac IIsi and Ic machines. In addition to Studio/8's strong original mix of paint tools, the new version delivers tear-off menus, a slideshow utility, and customizable gradients. \$295.
Electronic Arts, 1820
Gateway Dr., San Mateo, CA 94404. 415-571-7171, ex 379.

Printed Media

The Amiga Desktop Video Workbook

(for the Amiga) Jay Gross wrote this practical guide to doing video with an Amiga, including animation tools, software and techniques; 3D modeling, rendering and raytracing; MIDI and Amiga internal music and sound for video; sound mixing, timing and time code; video editing and postproduction; scripting and storyboarding, and much more. \$34.95. Micro-Search, 9896 Southwest Freeway, Houston, TX 77074. 713-988-2818.

Digital Video in the PC Environment

(for the Mac and IBM) Arch C. Luther's new book investigates digital vídeo interactive (DVI) technology, showing how it combines interactive full-motion video, stereo audio and computer graphics. As the authorwho was actively involved in the development of this technology-points out, "DVI technology makes possible the first systems which truly merge personal computers and television." Luther describes and explains DVI technology, its capabilities and how to apply the technology. He provides comprehensive explanations of the video, audio and optical storage media and how they all work together. He also examines still-video image systems, image compression technology, digital motionvideo systems, optical digital storage media and video manipulation and special effects. \$27.95 paperback, \$39.95 hardcover. McGraw-Hill Book Co., 11 West 19th St., New York, NY 10011. 800-2-MCGRAW.

Farallon MediaTracks The Ultimate

(for the Mac) Michael Fraase's new book is the first to explain how to use MediaTracks, Farallon Computing's new computer training software. Readers learn nine overviews of using MediaTracks for different real-world tasks involving employee training. The book also demonstrates how to integrate Media-Tracks with other Macintosh programs. Fraase is the owner of Arts & Farces, a multifaceted communications and professional services company specializing in hypermedia production. \$37.50. Business One Irwin, 1818 Ridge Road, Homewood, IL 60430. 708-206-2700.

The Official Adobe Photoshop Handbook

(for the Mac) David Biedny and Bert Monroy's new offering describes specific strategies for using Adobe's Photoshop imaging software in applications ranging from commercial graphics and retouching to color prepress and video. As is typical with good computer books, many techniques and tips not covered in the software manufacturer's manual are found here. Biedny is a founding editor of MacUser and Macintosh Today, while Bert Monroy is an awardwinning Mac artist. \$24.95. Bantam Electronic Publishing, 666 Fifth Ave., New York, NY 10103. 212-765-6500.

Printers

LaserJet III

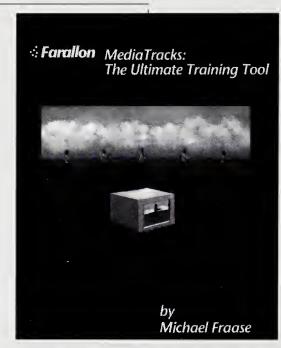
(for the IBM and Mac) Another laser printer, hohum? Hewlett-Packard already sells more laser printers than the rest of the PC market combined.

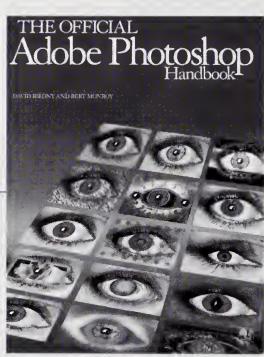
With the introduction of the IIP line it began to make inroads into the Mac part of the market. Aggressive pricing and improved functionality keep it the market leader. The Series III strengthens this tradition. The price of a PostScript-equipped and memory-enhanced Series III is hundreds of dollars less than Apple's IINT or IINTX. Pricing aside, perhaps the most important challenge the LaserJet III throws down is in its variable dot size. Up until now, the single toner dot size possible with 300 dpi laser printers was one of the reasons we still see jaggies when we look closely at some type and why we still see moire patterns and uneven patterns fills, particularly in blacks. The Series III allows variable dot sizes to produce better curves and fills. \$2,395 for the basic machine; PostScript cartridge \$695. Additional memory depends on street price. H-P machines are also heavily discounted on the street. Available at Hewlett-Packard dealers. Check your local phone book.

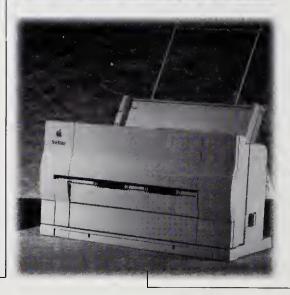
MaxiColor and Spectra*Star 430

(for the Mac and IBM) Agfa Compugraphic's new 300 dpi, non-Post-Script thermal-wax printer retails for a bargain price of \$5,950. To hook it up to a Mac, however, you'll need a compatibility kit that costs \$595. The printer comes with 13 fonts and 1.5 MB of RAM and produces one page of output every three minutes. Spectra*Star 430 is a 300 dpi PostScriptcompatible thermal-wax color printer that lists for \$7,995, which includes 6 MB of RAM and 35 Post-Script-compatible fonts and AppleTalk.

Agfa Compugraphic, 200 Ballardvale St., Wilmington, MA 01887, 508-658-5600.







General Parametrics Corp., 1250 Ninth St., Berkeley, CA 94710. 415-524-3950.

Personal LaserPrinter II, Business LaserWriter II

(for the Mac) Apple Computer's introduction of low-end printers has put pressure on the competition to lower prices and prompted recent announcements of price reductions. GCC Technologies' Personal LaserPrinter II, a non-PostScript 300 dpi Quick-Draw has dropped to \$999, while the Business LaserPrinter II, a true PostScript machine, has dropped to \$1,999. In comparison to these 4 ppm printers, the company's 8 ppm Personal LaserPrinter IIS dropped \$400 to \$1,499. GCC Technologies Inc., 580 Winter St., Waltham, MA 02154. 617-890-0880.

Personal LaserWriter LS

(for the Mac) This is Apple's first non-PostScript laser printer utilizing TrueType fonts in the new outline-font format. TrueType fonts will enable the printer to deliver good-quality 300 dpi output, making it a good home or office machine for the user who doesn't need the highquality graphic image output of a PostScriptbased printer. Several font manufacturers have announced they will be shipping additional True-Type fonts beyond the 13 included with the printer. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 408-996-1010.

Phaser II Series

(for the Mac and IBM)
Tektronix's new Phaser II
line of 300 dpi thermalwax color printers contribute to lowering the entry-level cost for color
printing. All the printers

in the line are modular, allowing users to expand and adapt the printers as their needs change. The lowest-priced model is the Phaser II SX for both Microsoft Windows 3.0 and the Macintosh. Optional driver kits for both versions include Freedom of Press, a PostScript emulation program, and Adobe Type Manager along with other drivers for \$295. The Phaser II PX includes built-in Post-Script and sells for \$7,995 for either Mac or IBM PCs. The Phaser II SX can be upgraded to Phaser II PX capability with the purchase of a PostScript controller card for \$3,195. Tektronix Inc., Wilsonville Industrial Park, P.O. Box 1000, Wilsonville, OR 97070. 800-835-6100, 503-685-3585.

StyleWriter

(for the Mac) Apple's newest printer offers high-quality printing for the low end of the market. The StyleWriter is a 360 dpi ink-jet printer that comes bundled with 13 TrueType fonts, Apple's new outline font format. The new printer will undoubtedly be attractive to the many buyers of the new Classic and lc boxes. It will print a page every two minutes at 360 dpi or a page a minute in 180 dpi draft mode. \$599. Apple Computer Inc., 20525 Mariani Ave., Cupertino, CA 95014. 408-996-1010.

Scanning

CIS+3515

(for the Mac and IBM)
Reflecting the downward
trend in color output pricing, Barneyscan has
slashed the retail price of
its 35mm color slide scanner, the CIS•3515, from
\$9,995 to \$4,495. Included
with the package are the
CIS•XP photo retouching
software and QuickScan
scanning software. How-

U C T

ever, Barneyscan's color separation utility, CIS•ColorAccess, is no longer bundled with the scanner and must be bought for \$1,995 minus a \$500 rebate offer. Barneyscan Corp., 1125 Atlantic Ave., Alameda, CA 94501. 415-521-3388.

DS-3000

(for the Mac) Color scanning prices took a dip downward with the announcement of Chinon's DS-3000, a 12-bit color overhead scanner. Up to 4,096 colors or 256 gray levels can be captured at resolutions ranging from 75 to 300 dpi. The overhead configuration allows scanning of both flat and 3D images. Files can be saved in a variety of formats. Under \$1,000. Chinon America Inc., Information Equipment Division, 660 Maple Ave., Torrance, CA 90504. 213-553-0274.

ES-300 C

(for the Mac and IBM) The price war for color scanning heats up with the introduction of Epson's ES-300 C color scanner. The unit scans 24-bit images in one pass, unlike most competitors, which require separate passes for each color. Resolution is 300 dpi; a desk accessory lets users adjust brightness and zoom horizontally and vertically from 50 to 200 percent. Letraset's Color-Studio and ImageStudio are bundled with the scanner. The ES-300 C will scan an 8.5" x 11.5' area and makes three halftone patterns available. For the base price of \$1,995 it comes with IBM standard parallel and RS232C interfaces. A SCSI interface for the Mac costs an additional \$595. Epson America Inc., 23530 Hawthorne Blvd., Torrance, CA 90505. 213-539-9140.

MTS-1850 35mm Slide Scanner

(for the Mac and IBM)
Capable of resolutions up
to 1850 dpi, the MTS-1850
captures 24-bit color as
well as 8-bit grayscale. At
\$2,995 for the IBM and
\$3,195 for the Mac, this
scanner establishes a new
low price point for the
slide scanner market.
Microtek Lab, Inc., 680
Knox St., Torrance, CA
90502. 213-321-2121,
ex 207.

NISCAN Spectra Mac

(for the Mac) For \$899, Mac SE and II owners can buy this new small-format color scanner. Over 16 million colors are scannable in a single pass. The scan area is 4" x 6". The ScanDo/DA software included with the scanner offers features such as reduction or enlargement of images from 50 to 200 percent; varying resolution settings from 50 to 400 dpi; saving an image directly to a file as it is being scanned; and a preview function for viewing images on the screen prior to scanning at full resolution. TIFF, PICT, Mac-Paint and EPS file formats are all supported. NISCA Inc., 1919 Old Denton Rd., Suite 104, Carrollton, TX 75006. 214-242-9696.

Utilities

Adobe Streamline 2.0

(for the Mac) This upgrade of Streamline improves the conversion capabilities of the earlier version. Streamline allows the user to convert scanned or electronically stored images into editable PostScript line art. Two new dialogue boxes controlling new color and grayscale conversion features make the user interface easier to use. The File Setup and Conversion Options dialogue boxes have been re-

Image Cataloging

Artists and designers who accumulate hundreds, perhaps thousands, of graphic images know that finding one when they need it can be difficult. A number of mature image catalogers are now available for Mac users. Here's a quick look at several of them.

PictureBook is a \$69.95 product from Loop Software that's suitable for smaller collections, holding up to 499 imagers in a "window." Several "windows" can be open simultaneously. Images can be viewed by name, type, date, image, creator or an annotated note. A big drawback is no search function.

For \$199 Multi-Ad Services' Search holds up to 32,000 eight-bit color thumbnail views of the user's images. The software can search by user-entered key words, file name, type, and size and the search can take place across a network, accessing multiple volumes.

Mariah is a specialized cataloger, optimized for multimedia since it can keep track of sounds, animations, and text as well as graphic images. This offering from Symmetry Software goes for \$149.

Another product suitable for networks is Barneyscan Corp's CIS-Gallery. Not only will it catalog 24bit images and show an 8-bit color thumbnail of them for the cataloger, but it will also track who has an image. This feature will prove useful in situations with large number of users. The search functions are also very robust. Although bundled as part of the company's Color Imaging System, it can be bought separately for \$695. Barneyscan Corp., 1125 Atlantic Ave., Alameda, CA 94501, 415-521-3388. Loop Software, P.O. Box 1249, Menlo Park, CA 94026, 415-326-4803. Multi-Ad Services Inc., 1720 W. Detweiler Drive, Peoria, IL 61615, 309-692-1530. Symmetry Software Corp., 8603 E. Royal Palm Rd., Suite 110, Scottsdale, AZ 85258.

602-998-9106

designed to simplify execution. The number of formats that can now be imported to Streamline has increased and includes compatibility with Aldus Freehand, Mac-Draw, AutoCAD and other software. Streamline 2.0 also converts scanned continuous-tone photographs and grayscale illustrations into PostScript line art. New features provide color and grayscale editing including tints, no color, black and white, standard process colors or custom colors. Part of an image can be selected and then edited as a separate object within drawing programs. The software allows users to add a variety of effects, including pen and ink, pastel, woodcut, charcoal and brush, \$195. Adobe Systems, Inc., 1585 Charleston Road, Mountain View, CA 94039-7900. 415-961-4400.

Bridges

(for the Mac) For users who need a primer in electronic color imaging, Pre-Press Technologies is offering its interactive stacks, Bridges. The software runs on a Mac II or SE/30 supporting 8-bit color, with a hard disk and at least 2 MB of RAM. The stacks are divided into five chapters: Color Theory, Electronic Imaging, Prepress Methods, Printing Methods and Products Overview. A Help card helps the user move through the tutorials. Color tenns can be clicked on to reveal a balloon that explains an unfamiliar term. \$39.95. Pre-Press Technologies, Inc., 2443 Impala Drive, Carlsbad, CA 92008, 619-931-2695.

Capture 3.0

(for the Mac)
This latest upgrade to
Mainstay's Capture allows users to take a snapshot of any portion of a
Macintosh screen and

capture screen images in high-quality color PICT format. Capture 3.0 has autoscaling capability. Users can type in any percentage from I to 100 and the captured image will be automatically scaled. \$79.95. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. 818-991-6540.

Claris Graphics Translator

(for the Mac) Moving graphic images between applications is always a problem, as the file formats are often foreign to each other. Claris offers a partial solution, at least for moving graphics between its own Claris CAD and a variety of other formats, including some large CAD systems. The software will translate common CAD objects between any two of the six file formats it supports-IGES, DXF, Claris CAD, PICT, MacDraw II and MacDraw. \$299. Claris Corp., 440 Clyde Ave., Mountain View, CA 94043. 408-987-7000.

Kodak Precision

(for the Mac) This series of software calibration utilities for the Mac generate mathematically correct calibration tables for permanent storage on the raster image processor (RIP) of the output device. The utilities make systemwide calibration possible, eliminating the often frustrating gap between software applications and the final output device. Precision offers automatic table selection once the original tables have been built and stored on the RIP's hard drive. The system will run on a Mac Plus on up. \$795. Kodak Electronic Printing Systems, 23 Crosby Dr., Bedford, MA 01730. 617-275-5070.

Radius ImpressIt

(for the Mac) This software product from Radius is for the compression, storage and decompression of still images, black and white or color, adhering to the JPEG standard. ImpressIt allows the user to compress 32-, 16-, or 8-bit color and 8-bit grayscale PICT or TIFF images into JPEG data streams. A typical compression ratio of 20:1 frees up storage space and cuts transmission time dramatically. A plug-in module for Adobe Photoshop allows images to be compressed and decompressed directly within the Photoshop application, \$179. Radius Inc., 1710 Fortune Dr., San Jose, CA 95131. 408-434-0770.

Stufflt Deluxe 2.0

(for the Mac) Release 2.0 of this widely used utility for the Mac offers increased speed in compressing and decompressing files. Other features include the ability to create Self-UnStuffing archives, automatic launching of an application and an accompanying compressed document, optimizers for MacPaint files and for text files, XCMDs for compressing and decompressing in Hyper-Card and SuperCard stacks, extensions for QuicKeys 2 macros, and many more. \$99.95. Aladdin Systems, Inc., Deer Park Center, Suite 23A-171, Aptos, CA 95003. 408-685-9175.

TextureSynth

(for the Mac)
A utility that has caused excitement in the Verbum offices is TextureSynth, a graphics program that lets the user create a wide variety of richly detailed textures, quickly and easily. The program uses continuous-tone shading and color to produce complex images, yet it is

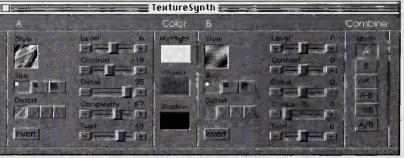
extremely fast. The textures can be realistic or abstract, ranging from fine-grained twill to garish day-glo. Textures are created and modified interactively using a unique control-panel interface. By simply changing a few control settings and color values (or using the program's randomizing feature), the user can generate many interesting variations. More complex, composite textures can be made by combining basic elements in one of several modes. TextureSynth also provides a convenient method for organizing and saving multiple texture descriptions in a single file structure.

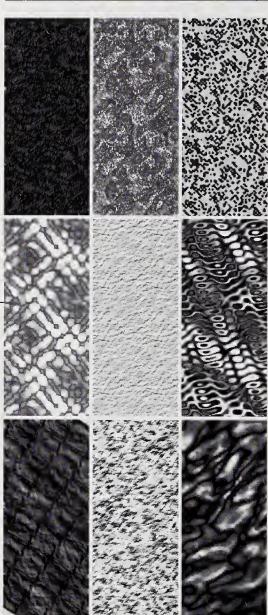
The images created with the utility can be exported to other applications, such as color paint, illustration, image processing, page layout, video production or 3D animation programs. They can be used in place of scanned-in textures, as backgrounds, area fills, masks, surface maps and so on. The program supports PICT and TIFF file formats at 8 and 24 bits per pixel. Although 32-bit QuickDraw is recommended, the program will run on a Mac with a minimum 8 bits, or 256 color or grayscale display capability. \$149. Pantechnicon, P.O. Box 738, Santa Cruz, CA 95061.

Video

24STV

(for the Mac)
This NuBus card from
RasterOps combines
many capabilities previously available only as
separate boards or addons into a single board for
real-time video processing. 24STV combines a
graphics accelerator,
24-bit color display, video
overlay, TV integration
and video compression.
The board can capture
and display 24-bit images





from different video formats in use in the U.S. or Europe, compress them on the fly, store them and then retrieve them for later use in publications. The user can also work with live video, overlaying it with text or graphics to produce training films or presentations. Standard video features include frame grabbing, pan and zoom, digital TV integration and video overlay. Real-time compression/ decompression and graphics acceleration are provided by add-on daughter boards, Quick-Pak and QuickDraw, respectively. \$1,795 for the display adapter, frame grabbing and video overlay board. Prices not yet announced for the two daughter boards. Raster-Ops Corp., 2500 Walsh Ave., Santa Clara, CA 95051.408-562-4200.

ChromaKey

(for the Amiga) The chroma key effect is one we see everyday on television programs, particularly the news. For example, during the Gulf War a reporter might have appeared to be standing in front of a giant map of the Gulf when in reality he or she was standing in front of a blue backdrop. The video camera "sees" the person and the backdrop and sends the resulting image through a chroma key device. Anything in the scene that is blue, such as the backdrop, becomes transparent, allowing a second video signal, the computer-generated map for example, to replace the

background. The effect is that the newscaster appears to be standing in front of an enlarged version of the map. The chroma key effect is used for many other special effects we see on video. \$395. MicroSearch, 9896 Southwest Freeway, Houston, TX 77074. 713-988-2818.

ChromaKey/ Switcher

(for the Amiga) Amiga users with the external genlock combination can create sophisticated video effects by adding the ChromaKey/ Switcher to their system. The product can put live video over the Amiga's pictures, in comparison to regular genlock effects which do the reverse. \$395. MicroSearch, 9896 Southwest Freeway. Houston, TX 77074. 713-988-2818.

Digital Film

(for the Mac) SuperMac offers a solution to the immense storage capacity required for storing even a few minutes of live video with Digital Film. This software replaces the hardware solution others offer to compress video clips so they can fit on ordinary hard drives or optical cartridges. Digital image storage gives the user precise control for grabbing video frames and rapid, random access to any video segment on the disk. SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086. 408-245-2202.

DVA-4000 Macintosh

(for the Mac)
This full-motion video
digitizer works with the
Mac II line. Bundled with
an 8-bit color display
card, it can capture video
signals, including NTSC,
PAL, RGB and SuperVHS.
A standard Apple 13"
color monitor will display

UC

the video in 24-bit color in real time (30 frames per second). \$3,000. Video-Logic Inc., 245 First St., Cambridge, MA 02142. 617-494-0530.

Mac Video Color Card

(for the Mac)
This 8-bit NuBus add-on board will convert RGB (red, green, blue) signals to the NTSC (National Television System Committee) video standard.
This material can then be output to VCRs. \$599.
VENT Inc., 110 Pioneer Way, Mountain View, CA 94041, 415-961-3671.

MacVision Color Video Digitizer

(for the Mac) Koala's entry in the video digitizing market captures input signals in 24-bit color, as well as grayscale, 8-bit and 16-bit color from a camera, video recorder or laserdisc through an external module, MacVision software provides a series of tools for editing digitized images. RIFF, TIFF, EPS, PICT, PICT2, MacPaint and 32-bit QuickDraw formats are all supported. Plug-in modules are available for Adobe Photoshop, Letraset Color-Studio and other programs. \$999. Koala Acquisitions, Inc., 70 N. Second St., San Jose, CA 95113. 408-287-6278.

QuickView Studio

(for the Mac) This NuBus video board combines with Hyper-Card-based video-editing software to allow multiple-window video capabilities on the Mac. The 16-bit color digitizing board captures and converts standard color TV signals and converts them to the Mac's RGB format for display in two windows simultaneously. The board can also accept SuperVHS and RGB inputs. The Editor software bundled with the board

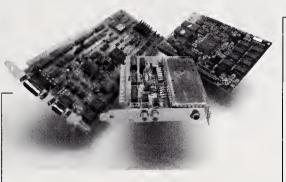
lets users apply a variety of special effects to the video. The package works with E-Machine's 16" ColorPage T16 and TX display systems, the 19" T19 system, or Apple's 13" color monitor and Display Card 8•24. \$2,495. E-Machines Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 503-646-6699.

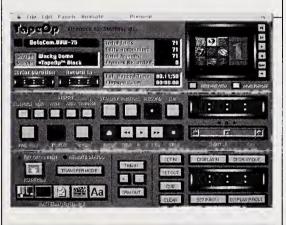
Soft F/X

(for the Mac) Off-line video editing is made possible with Soft F/X using a technique called disk-assisted editing. Users can edit and organize their clips into a presentation. Transitions such as fade-ins and dissolves are features of the software. The final product is an edit decision list that can then be taken to a Video F/X service bureau for the high-resolution assembly. Soft F/X does require a 600 MB hard disk. \$995. Digital F/X Inc., 755 Ravendale Dr., Mountain View, CA 94043.415-961-2800.

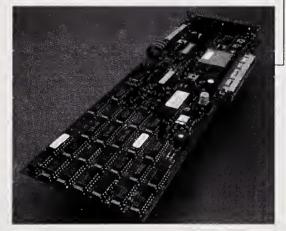
Super Video Windows

(for the IBM) This digital video/audio board for IBM compatibles brings the cost of video to a new low for this market with a price of \$695. The board allows the user to play fullmotion video and stereo audio from TV cameras, VCRs, videodisc or cable TV in any size window, anywhere on the computer screen. The usual video functions are supported, including scale, crop, zoom, pan, scroll, freeze, hue, saturation, brightness, contrast and graphics/text overlay. The product runs under Windows 3.0 or New-Wave 3.0. New Media Graphics Corp., 780 Boston Rd., Billerica, MA 01821-5925, 508-663-0666









TapeOp Video Control Center

(for the Mac) TapeOp makes it possible to do video animation transfers from any program that will generate PICT, PICS or TARGA (MS-DOS) format files. The software is compatible with MacroMind Director, Dynaware's DynaPerspective, Visual Informations' Dimensions and Strata's Stratavision/StrataFlight, Working with the Mac II line, TapeOp offers a software solution for controlling videotape machines with a Mac II, unlike other controllers that use hardware to interface the computer and the tape machine. A built-in script editor provides word processor or spreadsheet style convenience for assembling animation sequences. \$2,495. MultiVisions, Inc., P.O. Box 2733, Gig Harbor, WA 98335. 206-858-3274.

TV Producer

(for the Mac) This graphic overlay genlock card with chroma key is optimized for creating interactive training courses, multimedia business presentations, animation and video production. Three functional blocks are combined on a single Mac II card that must be inserted in the computer next to the Apple video card. The blocks are a genlock for synchronizing the Mac II to an external video reference; a chroma key circuit that makes overlay effects (superimposing titles or graphics on live video) easy; and an RGB to NTSC encoder. Various options are available, including NTSC Standard PRO with comb filters for broadcast applications; PAL for meeting the European standard; and NTSC/ RGB/PRO for analog RGB output. Prices have been reduced on the line and now are \$695, \$1,200 and

\$1,099 respectively. Computer Friends, Inc., 14250 N.W. Science Park Drive, Portland, OR 97229. 503-626-2291.

VBOX

(for the Mac and IBM) VBOX links the Mac or other computers with a variety of Sony video equipment, including its 8mm camcorders and video decks. Since it's a Sony product, with proprietary drivers, VBOX offers a safe path for the multimedia developer who needs to effectively connect these Sonv devices. \$249.95. Sony Corp., Sony Drive, Park Ridge, NJ 07656. 201-930-6432.

Video Capture

Video Master

(for the Mac) Routing video signals is the forte of this video box. From the Mac's serial port it provides four NTSC video inputs from camcorders, videodisc players, or VCRs and two outputs to VCRs and video monitors. Users can control video devices via infrared signals and switch between devices and splice video from different sources. Interfacing with HyperCard is possible via external commands (XC-MDs). \$599. VENT Inc., 110 Pioneer Way, Mountain View, CA 94041. 415-961-3671.

Video NTSC Encoder

(for the Mac)
This stand-alone device converts a Mac's RGB signal into a standard color video signal (NTSC) suitable for output to VCRs or video display monitors. It requires a Mac II system and will work with 8- and 24-bit color display cards. \$395. ComputerVideo, 215 Salem St., Suite 5, Woburn, MA 01801. 617-937-0888.



THE VERBUM ARTA





The Verbum Book of PostScript Illustration

by Michael Gosney, Linnea Dayton, and Janet Ashford

The ideal instruction book for designers, illustrators, and desktop publishers using PostScript graphics programs on personal computers. Focus on the talents of top illustrators who demonstrate the electronic artmaking process. The artist's own narrative keys readers in on the conceptual vision, providing valuable insight into the creative processes that go into a PostScript illustration project. Chapters end with a portfolio of PostScript illustrations created by the featured artist, with descriptions of the techniques used to create them. More than 100 outstanding examples of PostScript illustration throughout the book. 200 pp. approx. \$29.95

The Verbum Book of Electronic Design

by Michael Gosney and Linnea Dayton

This book introduces designers, illustrators, and desktop publishers to the electronic page layout medium and various application programs, such as PageMaker, QuarkXPress, Design Studio, and Ventura Publishing. Each chapter spotlights the talents of a top designer who guides readers through the thinking as well as the "mousing" that leads to the creation of various projects. These projects range in complexity from a trifold black and white brochure to a catalog produced with QuarkXPress. More than 100 illustrations, with 32 pages in full-color. 200 pp. approx. \$29.95

The Verbum Book of Digital Painting

by Michael Gosney, Linnea Dayton, and Paul Goethel

Contained are a series of entertaining projects that teach readers how to create compelling designs using the myriad of graphics tools available in commercial painting programs. Presented by professional designers, these projects range from a simple greeting card to a complex street scene. This volume also includes portfolios of paintings created by the featured artists, plus an extensive gallery of works from other accomplished artists and 64 pages of full-color paintings. \$29.95

To Order: Mail this coupon with payment to M&I Books, 501 Galves	
Or CALL TOLL FREE 1-800-533-4372 (in CA 1-800-356-2002).	☐ Check enclosed, payable to M&T Books.
YES! PLEASE SEND ME THE FOLLOWING:	Charge my: 🔲 VISA 🔲 MC 📮 AmEx
	Card No
☐ Verbum Book of PostScript Illustration \$29.95	Exp. Date
☐ Verbum Book of Electronic Page Design \$29.95	Signature
Verbum Book of Digital Painting \$29.95	Name
All Three Special (Save 15%!) \$76.85	Address
CA residents add applicable sales tax %	
Shipping & Handling \$3.50 per book	CityState
Total	Zip 4001

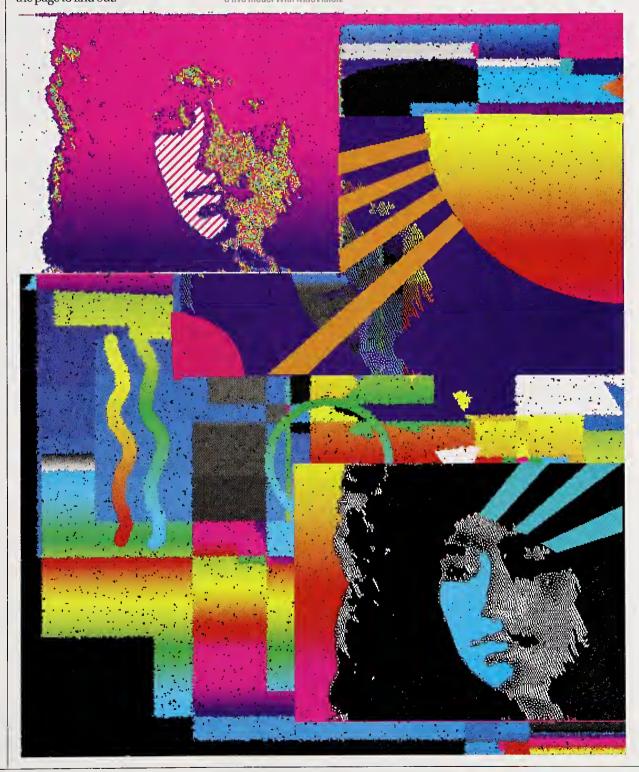
First Contact: Pass It Along

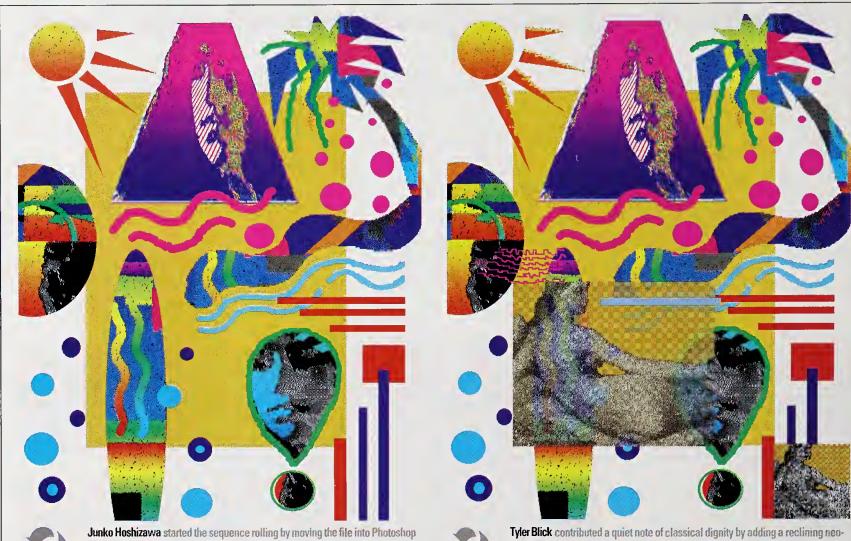
MAGES of art from a digital file are unlike any other

graphic form in two important respects: they never change over time (assuming that disks are nondegradable—perhaps a rash assumption), but they can be copied or altered in any way at any time by anybody. I wanted to exploit this paradox of ephemeral permanence by setting up a sequence based on the old game of "pass it along." What might happen if a file were modified in succession by a chain of artists? Would any part of the original image be recognizable after four or five metamorphoses? Turn the page to find out.



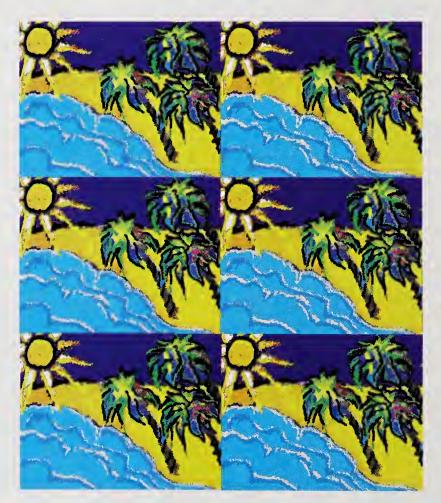
My original PixelPaint file. Portions were scanned from a live model with MacVision.





and rearranging selected portions and distorting other fragments. The perspective effect on the face was also done in Photoshop. Returning to PixelPaint, she added new elements with Brush and Polygon tools as the graphic began to ac-

quire a distinctly Californian sun and surfing flavor.



Tyler Blick contributed a quiet note of classical dignity by adding a reclining neoclassical figure. He also used Photoshop to process a 72 dpi scanned image, which was softened and automatically dithered and laid in a semitransparent mode over the background. After passing through Tyler's hands, the image had been altered only slightly.

4

Next, Janet Ashford

launched the file in a new direction. Using the palm tree and the sun as a starting point, she softened and blended the image with PixelPaint's finger-smudge and waterdrop tools, to make a multiple-repeated, idealized South Sea island that shimmers in intense sunlight.



Louis Fishauf completed the sequence with his tongue-in-cheek science-fiction treatment. (Note the previous version of the image in the console.) Soft-edged fragments of Janet's sunshine are tangled up in hard-edged letter-forms and rectangles.



Special thanks to Eric Baker and Tom Lewis for their assistance.



Navigating Verbum Interactive

To access the Verbum Roundtable, the user selects "Columns" from the main Contents screen, then chooses "Verbum Roundtable," which brings up the initial screen for the Roundtable.











Secrets

of

the

<u>Universe</u>

Revealed

The Verbum How-To

A Video Roundtable

OW DO you put together a roundtable discussion among six multimedia experts when you know you won't be able to get them all in one room at the same time? On top of that, how do you make the roundtable interactive with the viewer? That's the task that faced Steve Lomas, creative director of GTE ImagiTrek, a multimedia production facility.

The roundtable project was for the premiere issue of Verbum Interactive, a multimedia magazine published on CD-ROM. VI was being developed for the Macintosh using MacroMind Director 2.0 as the primary software shell. The magazine's editors had originally wanted to develop an interactive interview feature for the first issue. When the editors discussed production of the interview with Lomas and his group, the idea evolved into a roundtable concept. They set out to develop a new kind of recording and playback format for panel discussions--something that had never been done before.

TAPING THE INTERVIEWS

The first step was to line up and record interviews with the six panelists: Jonathan Seybold of Seybold Seminars, Marc Canter of Macro-Mind, Tom Corddry of Microsoft, Shaun Deane of Apple Computer, and Robert Abel of Synapse Technologies. Each expert was posed the same set of questions by Verbum multimedia editor David Traub. Panelists were also given the opportunity to address questions to other Roundtable participants. All the interviews were shot using a Sony DC327 Hi-8 video camcorder.

DESIGNING THE INTERFACE

A key canon in designing multimedia is producing an interface that is both functional and aesthetically pleasing. Lomas's group established four criteria for designing the VI Roundtable interface:

- It must look substantial and be elegant, to properly represent the program content.
- It should be fun to use and "impossible to break."
- ▶ The graphics should take full advantage of the Mac's high-resolution 8-bit 256-color display.
- The interface must communicate simply and clearly so that the user will always feel in control.

The resulting interface is shown in Figure 1. At the upper left are six buttons representing the categories of questions addressed







by the roundtable. The user clicks on a category, then chooses a question at the bottom of the screen. The user can also click on a sound button to hear the question posed. The user then chooses one of the panelists in order to hear and see his response. The chosen panelist is highlighted and then appears in the window at the top and responds to the question. Meanwhile, supportive copy, graphics and pull quotes appear in the top right panel. When the response is completed, the panelists across the bottom can be seen reacting to the answer. The buttons in the lower right-hand corner are for moving about within the issue of VI.

Choosing the Help button activates a video in the top screen in which Verbum publisher Michael Gosney describes how to use the interface (Figure 2). At times Gosney actually reaches out of the frame that holds him to point out certain details.

At any time the user can print out a transcript of portions or of the complete Roundtable by accessing a HyperCard stack.

CREATING THE BACKGROUND MARBLE

The background marble started out as video framegrab of a piece of yellow-gold marble. Lomas liked the texture but not the color. So he converted the RGB image of the marble to grayscale in Photoshop, throwing away the color, then converted the grayscale image back to RGB. Then he experimented with colors until he found one he liked: jade green. Next he created a grayscale gradient ramp (white to black, top to bottom) on an alpha channel and chose "Alpha channel to selection." Finally, he filled the selection with black to create the overall gradient look (Figure 3).

CREATING THE EMBOSSED BUTTONS

All the embossed buttons started as Illustrator 3.0 design documents that were imported into Color-Studio and rendered into clean, antialiased grayscale documents. These images were then brought into Photoshop and placed into the black-and-white (grayscale) interface layout. Once the layout document was complete, alpha channel mattes were created, offset and differenced to create the embossed mattes: one for the light side of the emboss and one for the dark side (Figure 4). The Brighten and Contrast tools were used to lighten and darken the embossed edges.

To create the highlight effect that indicates when an embossed button is selected, Lomas chose the button in Photoshop, feathered it by 5 pixels and then brightened it by +65. The result is a soft, bright glow that comes over the button (Figure 5).

CREATING THE PANELIST TABLE WINDOW

The panelist table window features all six panelists sitting at one table as if they were actually seated together. Creating this panel was Lomas's biggest challenge, since the participants had been taped over a two-week period in three different locations.

To create a common background for the panel, Lomas took a 640 x 80 strip from the headroom above the panelists in a full-size framegrab (Figure 6). This strip was then cut into six equal 106 x 80 rectangles, which were then numbered 1-6 from left to right.

Each panelist was then assigned a position at the table and a corresponding numbered background rectangle. Video framegrabs of each panelist that had been traced and reduced to 106 x 80 pixels were combined with his section of the background using the Calculate/Composite technique found under the Image pulldown menu in Photoshop (Figure 7).

To position the various rectangles into a seamless landscape in Director, Lomas created a template with each rectangle as a different shade of gray. The template was 640 x 480 and the rectangles were placed at their exact position relative to the overall screen. In

Director, ImagiTrek's Dan Spirn imported the placement template and performed a "Cast to Time" to position it precisely on the screen. He then positioned the panelist rectangles over the template (Figure 8).

HIGHLIGHTING THE PANELISTS

Whenever a particular panelist is chosen by the VI user, the panelist is highlighted in the panelist table window as well as being featured in the speaker window. Achieving this highlight effect took several steps.

First Lomas created a dampened version of each panelist by filling the entire image with 20 percent black (Figure 9). "This was necessary to give me sufficient



dynamic range to achieve the spotlight effect without having to overbrighten the image of the spotlight," he points out.

He created a soft oval matte for the spotlight: white oval on black, "I was careful to make sure that all the oval, including the 'glow,' remained within the 106 x 10 rectangle." This matte was then pasted into alpha channel 5 in all 48 panelist documents. It was then used for "Alpha to selection" selecting the area that would be brightened by the spotlight. Lomas then used the Brightness/Contrast controls to brighten the oval selection by +20. Next he inverted the selection and dampened the background by filling it with 20 percent black. He copied this image to its own document and saved it as SpotBckrnd. In preparation for the next process, he used Calculate/Darken to combine the original cutout on channel 4 with the RGB image. The resulting image was the panelist on black, which Lomas stored on the original RGB channel.

"Real spotlights create cast shadows, and so do ours," Lomas notes. To create the shadow mattes he started by duplicating the alpha channel 4 cutout of the panelist to alpha channel 6. Next he filled the white silhouette with 15 percent gray and performed a Guassian Blur, 3.0, to the entire channel 6





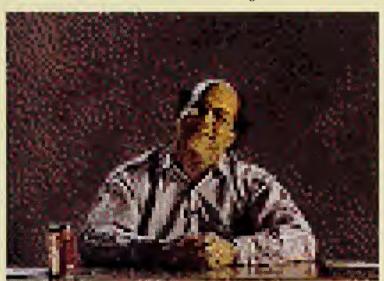
image. Then he offset the image using Photoshop's offset filter, 5 pixels left, 5 pixels up. He selected "Repeat edge pixels" in the dialogue box to maintain the black background.

Next he chose Calculate/Add under the image pulldown to combine alpha channel 4 with alpha channel 6 and saved the result as alpha channel 7. This image was a white cutout with a soft gray drop shadow. Now he had to combine the shadow matte with the spotlight to create a natural shadow, all within the 106 x 80 pixel rectangle. To do so, he used Photoshop's Calculator to multiply the shadow matte on channel 7 by the oval matte on channel 5 and stored the result on channel 8.

The final step was to composite the image of the panelist over black

with the SpotBckrnd he had saved. He used Calculate/Composite to do so. The resulting image (Figure 10) allowed a little of the black background to "pour" through the shadow matte.

The Roundtable, with complete audio recordings, video and printed transcripts of the interviews, ended up occupying enough space to warrant its own disc. Thus, the first issue of Verbum Interactive is a two-disc set. The interactive panel discussion, like most advanced multimedia projects, required the combined skills of electronic design, illustration, video production, editing (audio, video and print) and "multimedia integration." Its producers see it as a model for a new kind of topical recording and publishing.





Editing the video and audio











Bob Abel responds to a Verbum Roundtable question. Full-motion video (30 frames per second) is the ultimate goal in multimedia publishing. Simulated full motion—5 to 10 frames per second saves disc space and load time, with more than adequate results.

ach interview for the Roundtable ran about 2 hours on tape, but Lomas performed a paper cut to get the material down to about 30 minutes per interview before passing it along to video editor David Moorhead.

The Hi-8 video was digitized into the Avid 1 Media Composer. "We chose to digitize the video at the lowest visual quality to allow enough disc space to capture the high-quality PCM digital audio directly from the Hi-8," says Lomas. "Our strategy was to cut the picture and audio together in Avid, all the way through final cut."

Once the video was edited to length, the audio was stripped off and fine-tuned in Soundtools while the video was "auto-assembled" from the original Hi-8 masters to a Betacam SP framegrab master.

Next, the video was edited back to the audio, making whatever adjustments were necessary to maintain sync. "Since the 'movies' would be playing back at frame rates considerably less than 30 frames per second, this actually gave us quite a bit of freedom in terms of jump-cutting segments," Lomas notes. "In other words, the video looked a little jumpy to begin with, so additional jump cuts blend in."



October 1- 4, 1991 • San Jose Convention Center • San Jose, California

Call or write for a free brochure: 800-777-6650 ext. 8; (213) 457-5850; Fax (213) 457-4704

Seybold Seminars, PO Box 578, Dept. 8, Malibu, CA 90265

Look and Feel

O—DO YOU like writing for multimedia?" The question came from Ed Coderre of Moov Design as I handed over what I sincerely hoped would be the last draft of my column for the first issue of *Verbum Interactive*, a multimedia magazine in CD-ROM form. The folks at Moov were doing a masterful job of weaving together text, pictures, sounds and music, embroidering it all with animations (interactive and otherwise), to make up a unique publication.

"Yes," I answered, "I sure do."
Even though it was 10 o'clock at night. Even though the 2000 words that would actually appear as text on-screen in the interactive "Look and Feel" column had taken months of stop-and-start work to produce. Even though there had been some tense telephone calls as writer, editors and art director tried to get our creative visions aligned. Even though I had felt incredibly slow and clumsy as I tried to catch on to how my written words would fit into this medium.

THE PROCESS

For interactive multimedia publications to work, pictures, text and sound have to be well integrated so that they appeal to the reader/audience when they appear on a TV screen or personal computer monitor. One way to be sure they're integrated is for the writer to think carefully about all of them. I didn't know it when I started, but writing for an interactive multimedia magazine can be quite a bit like writing for comic books—something else I'd had no experience with.

Jackie Estrada, managing editor of the print version of Verbum, a wizard with words and also one of the driving forces behind the annual San Diego Comic Convention that brings together comic book producers and aficionados from all over the country, explains that writing for comic books, television, film and now perhaps multimedia is a similar process. All of these media rely heavily on something other than words to tell the story. "It's a bad comic," she points out, "that has to use words to tell us that 'the monster burst through the door.'

According to Estrada, two methods are commonly used by comic book writers, who are not usually the same people who draw the stories. In one method the writer provides both the dialogue and a very detailed, panel-bypanel description of the story for the artist to follow—for example, "The story opens in the middle of the night with a full moon reflecting on a lake, which extends across the horizon. A rowboat is beached on the right. A man who looks like Sting, dressed in a rumpled Armani suit, leaves the rowboat, carrying a dripping amorphous object the size of a loaf of bread in his left hand. He walks toward a lone, small man sitting on the bank with his back to us. There are no other figures in the scene, but there are some trees in the left foreground and you can barely make out menacing shadows of people about to come out of the cover provided by the trees. The walking man says, 'Nice night for a lynching.'

In method 2, the writer provides the artist with a bare-bones description of the story, such as "Just before the villains arrive on the scene, the hero comes back from searching the lake and finds his father on the shore." The artist produces the illustrations, and only then does the writer produce the words that appear in captions and dialogue balloons.

The editor's role in all this is basically the same as a print editor's—to point out to writer and artist the things that don't quite work, tactfully and kindly and before they get too far down the road: "I suppose we could put all this dialogue in one frame, but we'd have to leave out the art," or "The scene you've described for this panel calls for 75 people, a sea monster and a tornado wreaking devastation—I'm not sure they're all going to fit."

Being a "hands-on" sort of writer/editor, I chose the first of the two writing options, carefully scripting every word, illustration, sound and interactive button that I wanted to see in my interactive "Look and Feel" column. And, eventually, it worked out. But next time I'd like to try the second method: a kind of collaborative mental trapeze act, in which writer, editor, art director and ultimately the reader alternately release and catch, catch and release the metamorphosing product of our collective imaginations as it flies through the air with the greatest of ease.

In the meantime, I've gathered together some thoughts on the subject of how to begin to write for interactive multimedia:

- ▶ When you're working in this new medium, you need to realize that it's going to be difficult to communicate your ideas for an entire production (through a script, a tape, photos, paintings, all existing as separate pieces) to another person. Whereas the manuscript for a print article is fairly easy for an editor to read, understand and edit, multimedia projects require a lot more time in reading, looking at, listening to and mentally assembling all the pieces.
- Make sure you understand the interface. What are your options for interaction with the "reader"? Will there be buttons? What events will happen automatically and what will have to be initiated by an action on the part of the reader? How many things can be happening at once—can you simultaneously have music, someone speaking and an animation running in one corner of an illustrated screen? Some of the limits on these possibilities are technological; others are imposed to protect the reader from being overwhelmed. If possible, see a prototype. Go to a studio that has the multimegabyte drives, the video boards and the other hardware necessary to run the material in its intermediate stages, before it's compacted onto an iridescent disc. Even if it's a chore to get there, go. It will make all the difference in the world to your understanding of what you're trying to accomplish.
- Understand and scrupulously follow the format devised by the editor for coding the script. You'll need to put down on paper (and on

disc) the text of the article that will appear on-screen; any hidden text the reader can find by clicking key words; the notation that will mark the key words themselves; the notation for where one screen (or block or page) of text and pictures ends and the next begins; where the reader is offered the option to branch, to wander off on a tangent and explore; the points where the sound should kick in and the artwork should change-all the things the editor and art director will need to know. If the editor hasn't developed such a format, take the time to get together and work one out.

- With the help of someone who's used to thinking visually—the art director is a good bet—draw a map of your article (or chapter or whatever) to show its basic organization and how the reader will get around in it.
- Remain calm and optimistic. This is a new medium. As Verbum Interactive's managing editor Paul Goethel points out, "We don't really know what this medium is yet." There are all kinds of possibilities for writers. Those who write for the sake of the way words "sound" can have a great time with this medium—the words can be spoken over a static or animated visual background. Those who write in long, complex sentences to present complex ideas can still do so if there's an option for the reader to output a print version of the text. For on-screen reading, complex text will probably have to be modified. Verbum Interactive's art director Jack Davis has observed that people don't like to read a lot of text on-screen. Deciphering type displayed at 72 dots per inch on a flickering background can be a chore. They'll read the title of an article, says Davis, look at the graphics, choose to read a short block of introductory copy and make a decision at that point about whether to continue reading the article or go on to something else. On the other hand, Bonnie

In this new medium, text, pictures, sound, movement and control have to go together—the way speed, steering, braking and comfort have to go together in cars.

Ferris, a principal in Interactive Presentation Technology, has found that since people are used to reading text, they rely on the text at first to get into her company's interactive educational products. Until they get used to the new medium, if there's not enough text (including directions about how to "turn the page" or turn on an animation), they feel lost, stumped about what to do next.

THE PRODUCT

As the first *Verbum Interactive* issue was being put together, my friend and colleague Janet Ashford had an opportunity to test-drive it. "I thought it had a 'buggy' feel," she says. Not buggy as in software bugs, but buggy as in horseless carriage. Early steam-driven automobiles were really buggies with engines to replace the horses. It wasn't until the Model T and similar cars came along, with seats

inside an enclosed passenger compartment and steering wheels instead of sticks, that the automobile began to develop a persona of its own.

Ashford found that she wasn't entirely happy sitting in front of what amounted to a TV screen on a table and clicking with a mouse to read the magazine. To develop its own persona, perhaps the interactive electronic magazine will have to wait until the laptop electronic book is a reality and we can curl up in an easychair or go out on the porch with a glass of lemonade and browse through our full-color, surround-sound, animated, touch-screen interactive magazine.

THE FUTURE

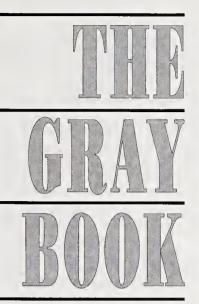
Will interactive multimedia (on CD-ROM or some other medium) make it? Will it be accepted as a way to read magazines, a way to learn? There's a vast potential readership out there who, although they read books and magazines, think of a video screen as something to relax in front of, to be passively entertained by, who sometimes consciously choose network TV over public broadcasting because they don't really want to be mentally engaged beyond a minimal level. These readers may respond to interactive multimedia by looking around for the reins and complaining that they miss the buggy whips. But there's another potential readership who grew up with remote controls and joysticks, and they'll be into this medium right away and looking for fuel injection and turbo charge.

In this new medium, text, pictures, sound, movement and control have to go together—the way speed, steering, braking and comfort have to go together in cars.

Music and pictures are very good at communicating some things—emotions, moods, information,

even some ideas—but not necessarily complex ideas. For those we need words. "A picture is worth a thousand words," they say. In that case, the Gettysburg address rates somewhere between a quarter and a third of a picture. Some of the Ten Commandments come across in pictures, but some require a familiarity with, or even a look-it-up-and-read-it-again reference to, the words.

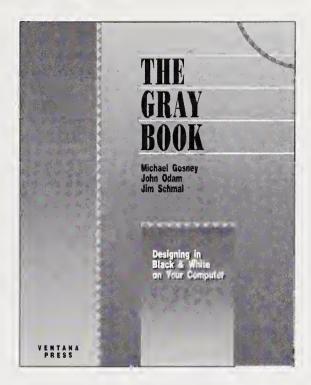
Especially in educational applications, the new medium has the potential to be much more like reading a book than like watching TV—only better. Not everyone learns best by reading print on a page or by listening to a lecture; some learn best by physically interacting with the material. While this medium is still in its infancy, we have the opportunity to do some planning, to give some serious thought to how to keep this techno-based medium from putting more distance between haves and have-nots; how to keep the quest for "eye candy," as art director Jack Davis calls the visual delights possible on the interactive multimedia screen, from upstaging the substance of the production; how to reverse the trend that has tended to make hours in front of a video screen a substitute for real-life experience in a mud puddle, up a tree or on a soccer field.



Designing in Black & White on Your Computer



Michael Gosney, John Odam, Jim Schmal 224 pages, 400 illustrations ISBN: 0-940087-50-2 \$22.95 U.S.



Adding color to a desktop-published document can be as simple and inexpensive as black, white and shades of gray. This "idea gallery" offers a lavish variety of the most interesting graphic effects to enhance the work of desktop publishers.

P.O. Box 2468, Chapel Hill, North Carolina 27515 919/942-0220 FAX: 919/942-1140

The Ventura Publisher 25 C5

The Ventura Publisher Conference is back, bigger and better than ever. This year we will incorporate sessions on tips & tricks and add real-world projects to the repertoire of seminars. New "mini-sessions" will be included to cover specific aspects of Ventura, as well as running a desktop publishing business.

Registration includes free admission to the Seybold Computer Publishing Exposition in San Jose immediately following our conference, for an exciting six-day publishing extravaganza. You will also receive the conference magazine filled with tips & tricks, and a disk loaded with free software.

Yes, the 1991 Ventura Publisher Conference is back, with more seminars, more space, more computers, and more expert help. Don't miss this opportunity. "I've been with my company for eleven years and I have been to quite a few conferences. This was the best!" Vicki Garden Hutchinson, KS

"This was wonderful! I learned a lot, met some interesting VP users, ate too much, got no sleep... a great success! I can't wait for next year!" Beth Hoffman Palo Alto, CA

"An excellent chance to learn new techniques, overcome problems, get answers, find ways to get more answers, discover things I'm doing wrong, and reinforce what I'm doing right. Yes, I'll be back for more of the same next year!"

Michael J. Dorcey Manhattan, KS

Simply the

Registration

Registration for the 1991 Ventura Publisher Conference is on a first-come, first-served basis, and we are expecting a sellout. The registration fee is \$395 per person (\$450 after September 1). Pre-registration is required in writing with payment enclosed. Use a separate registration form for each person; photocopy the form for additional registrants. Mail or fax the completed registration form along with your payment. VISA and MasterCard are accepted; Purchase Orders will be accepted if payment is received by September 1. Payment must be drawn in U.S. dollars. Bank wire transfers are available for international attendees.

Cancellation Policy

Cancellations must be received in writing, and will be accepted prior to August 15 with no penalty. Cancellations received between August 15 and September 1 are subject to a \$150 penalty. Refunds will not be given for cancellations made after September 1.

NAME	
COMPANY	
ADDRESS	
CITY/STATE/ZIP	
BUS. PHONE	

VISA/MASTERCARD # AND EXP. DATE

SIGNATURE

P.O. (ATTACH COPY)

☐ CHECK ENCLOSED

Mail or fax a copy of this registration form to: VPUG, Inc., 7502 Aaron Place, San Jose, CA 95139 Fax: (408) 224-9086. For more information call (408) 227-5030.

SEPTEMBER 28-30, RED LION HOTEL, SAN JOSE, CALIFORNIA

Mac Bias

I'd like to bring to your attention a curious phenomenon occurring in your great publication. It caught my eye most particularly in Verbum 4.3, and I think it needs to be pointed out to you. In the New Frontier Products section, most of the products are referred to as being "(for the Mac)." This becomes rather curious when one looks at a number of the entries, since many of the products were first introduced for other platforms. Were they announced in Verbum then? Has it only become newsworthy once a Mac version was released?

I've frequently read *Verbum* articles that remark on new Mac software abilities that are things I've been doing for years, in some cases, under MS-DOS. I'm not suggesting that the Mac doesn't offer some clear advantages, only that it's not so one-sided as one would think from your magazine.

I got into computing in '88. At that time, I wanted a Mac, but couldn't go that route, as >8-bit displays were only available on Intel-based machines. I've now got over \$20,000 invested in this one system (now a 25 Mhz 386), and

need to make this investment pay off. If money were no object, I would love to have a Mac and Amiga in addition to my 386; the worth of these platforms is not lost on me. I suspect that, unlike Graham Nash or others, I may be more representative of your readership than you seem to think, and need to work with what I've got. Aside from file format translation hassles, I've actually got a pretty powerful tool here. I think that, with tools like Lumena, Corel-DRAW, and others, it can hold its own against a similar investment on other platforms.

So, OK, I'm not a Mac person. Am I a pariah? Unworthy of your patronage?

David Dunning The Electronic Paint Co.

San Francisco, Calif.
Although we've covered Amiga and
MS-DOS since our first issues, we've
evolved in large part with the Mac
community of programmers, artists, and service bureau owners who
have popularized DTP and electronic design tools. With more
electronic design happening on
DOS systems and our increased
coverage of multimedia, you'll see

more specifics on MS-DOS and on Amigas as well.

A New Aesthetic?

I'd like to see you address one of the core issues that I see *Verbum* confronting: How do computer aesthetics relate to other kinds of aesthetics? In particular, how—and in what ways—can the computer forge its *own* aesthetic, apart from other trends in fine art, design, textiles, etc.?

John G. Stewart Hypermedia Solutions Washington, D.C.

When it comes to making art, a strictly computer aesthetic turns out to be a flawed concept. Digital tools offer far too many different art-making possibilities to sum up as a singular "computer art" genre. And, in general, the best works seem to emerge in a broader creative context whereby the computer's capabilities are only part of the overall approach to concept and execution. In other words, artists bring ideas from other media into the process and often use other media (scanned drawings or photos, a "woodcut look," mixed media output, etc.).



We have a few corrections for *Verbum* 4.3:

- There was a mistake in David Traub's Neomedia column: the attendance at the 1990 BIS Digital Multimedia Conference was 4,000, not the 700 we had listed.
- ▶ The Foundation authoring system, mentioned in Gene Brawn's "Confessions of an Amiga User," is published by Impulse: 803-556-3459.
- A slip of the caption writer's pen put artist Linda Ewing (Gallery, page 14) at Cerritos College when in fact she is studying with Michael Johnson at *Cypress* College.
- ▶ Finally, because of a printer's error there was no caption on page 15 of the Gallery. The image, by Greg Vander Houwen, is reprinted with caption on page 39 of this issue.



FEATURING COMPUTER-ASSISTED FINE ART FROM THE LEADING PIONEERS IN THE FIELD.
ARTISTS SHOWCASED IN THE VERBUM GALLERY'S INAUGURAL SEASON:
MICHAEL JOHNSON, ROZ DIMON, BRENTANO HALEEN, SANDRA FILIPPUCCI,
BARBARA NESSIM AND LAURENCE GARTEL.

FRAMED FINE ART FOR VISIONARY COLLECTORS AND CORPORATE PURCHASES.
PRICED FROM FIVE HUNDRED TO SEVERAL THOUSAND DOLLARS,
THESE LANDMARK WORKS ARE AN EXCELLENT INVESTMENT.
DIGITAL ART IS TAKING ITS PLACE ALONGSIDE MIXED MEDIA AND PHOTOGRAPHIC FINE ART,
AND VALUES WILL INCREASE DRAMATICALLY DURING THE 1990s.
CALL FOR COMPLETE INFORMATION.

THE VERBUM GALLERY OF DIGITAL ART

670 SEVENTH AVENUE, SECOND FLOOR • SAN DIEGO, CALIFORNIA 92101 619-233-9977, FAX 9976

(Fine Art Output, continued from page 12)

ALL PRINTS ARE NOT EQUAL

When you need to make a print for an exhibition or sale of your work, you have a second set of choices to make. If you're working from a slide or transparency, you can choose among three types of prints, with varying degrees of cost and permanence.

The best known of these three high-quality methods for making prints is Cibachrome, which uses pure, highly stable Azo dyes. These dyes, as part of the print emulsion, are coated onto a polyester base for a glossy finish or on resincoated paper for a pearl finish. During processing, the dye layers are selectively bleached away, resulting in a brilliant color print that is extremely sharp and fade resistant. For those who use light-boxes to display their work, Cibachrome is also available in translucent or transparent display films. Cibachrome images will last for 780 years in dark storage or around 28 years if continuously displayed.

A more costly alternative is the dye transfer print. This method of printing has been around longer than Cibachrome and is still used by many fine art and commercial photographers, as well as galleries and museums worldwide. In this process, your transparency or negative is used to make a set of pin-registered film matrices that are then soaked in dve baths and transferred in sequence to fiber-base paper to form the final image. Dye transfer offers you the ability to control contrast, make color corrections, and control color balance precisely for each print, but it's not cheap, and relatively few labs in the United States have the expertise to offer the service. One lab that does, Visual Projects Center of Pepperell, Massachusetts, charges \$750 for five 16" x 20" prints of the same image from a color negative, \$1000 from transparencies. The life of dye transfer prints is about 780 years in dark storage, 45 years on display.

The newest and most permanent color print process is the UltraStable Permanent Color Print, developed by fine art photographer Charles Berger. Like dye transfer, this process also requires full-size separation negatives from your transparency, negative or print, but it uses pigments that are much more fade resistant. The negatives are contact-printed on plastic sheets coated with a layer of cyan, magenta, yellow or black pigment, then transferred to a white polyester base and washed in warm water. These steps are repeated for all four pigment layers and the result is a full-color print with a display life of at least 500 years, 780 years when stored in the dark. As with dye transfer, UltraStable Permanent Color Prints are not cheap (about \$1000 for a 16" x 20" print, although additional prints of the same image are much less), and I know of only one lab in the United States that is offering the service, Collectors Color Prints of Jamison PennMr. Arlen Britton is a senior Graphic Design major at the Minneapolis College of Art & Design, with a background in photography.

RESOURCES

Collectors Color Prints

P.O. Box 343 Jamison, PA 18929 215-343-3214 Cibachrome prints Dye transfer prints UltraStable prints

Ilford Photo Corporation

West 70 Century Rd. Paramus, NJ 07653 800-631-2522 Cibachrome labs

Light Impressions Corporation

439 Monroe Ave. Rochester, NY 14607 800-628-6216 800-828-9629 NY State Archival storage products

Portland Photographics

P.O. Box 7557 DTS Portland, ME 04112 207-774-6210 800-622-4227 Cibachrome prints Duplicate transparencies

UltraStable Color Systems

P.O. Box V-2 Felton, CA 95018 408-335-2169 UltraStable labs

Visual Projects Center, Inc.

14 Lomar Park Dr.
Pepperell, MA 01463
508-433-8448
Cibachrome prints
Dye transfer prints
Duplicate transparencies

sylvania, although they have temporarily stopped taking new orders until they have completed a move into new facilities.

If you want to print directly from color negatives or from internegatives made from your transparencies, you're in luck. Over the past few years the display life of color photographic papers has dramatically improved, to the point where it is approaching that of Cibachrome prints. Your choices here are basically limited to three products.

The first is Fujicolor Super FA Type II and its professional version. Prints made on this material should last approximately 24 years on display, and 481 years in dark storage. One drawback to this material is that you may find its color palette somewhat garish or oversaturated.

Your other choices are Konica Color QA Type 2 and the Process RA-4 version of Ilford Colorluxe. Both materials have identical image stability characteristics because Ilford is using Konica dye technology in its product. Prints made with these materials should last about 21 years on display and 481 years in dark storage.

NEW DEVELOPMENTS

Adding to the various output options available to computer artists is the Ilford Digital Photo Imager (DPI), which will be available later this summer. This self-contained printer/processor will produce 8 1/2" x 11" prints and overhead transparencies or 35mm slides from any computer with a SCSI interface. The Digital Photo Imager uses a laser to write the image onto liquid crystal light valve cells (which takes about two minutes), then prints them onto photographic film or paper and processes them in as little as three and a half minutes. The machine is said to offer up to 3500 lines of resolution per 35mm slide and 300 pixels per inch for 8 1/2" x 11" prints, up to a maximum of 2500 x 3500 pixels per image. It supports 24-bit color with 256 levels of gray and 16.7 million colors. Because it uses films and papers incorporating Cibachrome technology, the images have the same light and dark storage properties as other Cibachrome products. As of this writing, the largest output size from the DPI is 8 1/2" x 11", although Ilford is considering making larger models available in the future.

Obviously, the subject of image permanence is much more complex than what I've presented here, and the technology is constantly changing, usually for the better. Ideally, every color film and print process would be truly archival and compromises wouldn't be necessary, but until that happens, your best solution is to stick with Fujichrome or Kodachrome films for output and duplication. What type of print you make from these, whether Cibachrome, dye transfer, Ultra-Stable, Fujicolor FA, Konica Color QA, or Colorluxe will depend largely on your personal preferences and those of your clients.

Ideally, every color film and print process would be truly archival and compromises wouldn't be necessary...

BACK ISSUES

1.0 Summer-Fall '86 1000copy edition, inaugural issue. Cover: illustration by Michael Gosney with Full-Paint and ThunderScan, with type and format designed by John Odam with PageMaker. Minimal writing and no advertising. Retrospective of publisher Gosney's "Macintosh Verbum" one-man show, and Macintosh art by French illustrator Jean Solé, Australian Malcolm Thain, nature artist Jim Pollock, Jim Hance, Jack Davis, Ed Roxburgh and Nathan Weedmark, plus excerpts from Michael Green's Zen and the Art of the Macintosh. \$20.00 - available in limited quantities.

1.1 Winter-Spring '87 The first "real" Verbum, designed with PageMaker 1.2, black-and-white, 300 dpi laser output, beautifully printed on 70 lb. Sequoia Matte, 5000-copy edition. Cover: masthead type treatment by Jack Davis with MacDraw and illustration, also by Jack, with Pro3D (Linotronic output). Avant-garde concept artist Paul Rutkovsky's redigitized illustrations. Mike Swartzbeck's trailblazing scanned image montage. David Brunn's digital photography. John Odam on Fontographer. \$12.00available in limited quantities.

1.2 Summer '87 Produced with Ready, Set, Go! 3.0, 1270 dpi Lino imagesetter output. Cover illustration by Jack Davis using Realist (pre-release of Image-Studio). "Amiga Video" on the animated Amiga. "Painting as Spiritual Discipline" by Jack Davis on Mac Calligraphy. "Big Blue Art" by Mike Kelly on DOSbased graphics. "Lino Seps" by Mike Saenz features the first publication of his Marvel Comics' Iron Man cover, the first PostScript sep. Australian Mac-artist Malcolm Thain, \$7.00



Verbum Interactive—The Pioneering Multimedia Magazine on CD-ROM If you don't have a CD-ROM drive yet, this is reason alone to get one. Verbum Interactive is a fully integrated "magazine," with text (on screen and available for printing), sound, graphics, animations, talking agents, video and music—all at your command through an engaging point and click interface. Developed by Verbum's editors and designers and some of the leading multimedia producers in the industry, Verbum Interactive contains columns, feature stories, a Gallery of exemplary animation and multimedia works, a Demo section with product presentations and demo programs and a Sourcebank of products, publications and services.

VI also features stereo music (playable on regular CD players) from Todd Rundgren, Graham Nash, D'Cückoo, Pauline Oliveros, Christopher Yavelow and Geno Andrews, integrated with animations and interactive files. 3D animations, sound clips, talking agents and other advanced multimedia elements are used throughout. The Verbum Roundtable is an interactive panel discussion on multimedia with six industry leaders that fills a separate CD-ROM disc, which contains 1.5 hours of video material accessible through an interactive interface.

The two-disc *Verbum Interactive* 1.0 is priced at only \$49.95 for the Macintosh edition. A version for IBM-PC/Windows will be available in late 1991.

1.3 Fall '87 Produced with PageMaker 2.0. 10,000-copy run, the first to be sold on newsstands. Cover: masthead type by Ed Roxburgh and photo/illustration by Jack Davis, both developed with ImageStudio. April Greiman's "Pacific Wave" sculpture/exhibit. "Desktop Videos." "Continuum," a short story by Linnea Dayton. Dominique de Bardonneche-Berglund, Swiss digital painter. Jack Davis on ImageStudio. "Creative Waveforms" by Neal Fox focuses on music. \$7.00

2.1 Winter-Spring '88 The first color cover produced with Illustrator 88, by John Odam, digitally separated. Steve Hannaford's first "Against the Grain" column with critical technical/economic guidance. "Stackware Party" by Linnea Dayton. Lawrence Kaplan's "Hot-Tech" prints. "The Fine Art of Dot-Matrix Printing" by Nira. "PC3D Showcase" by Jack Davis. "Color Output Options" by Erfert Nielson. John Odam's "First Contact" on Free-Hand. \$7.00

2.2 Summer '88 Verbum's first cover theme is "Fashion." Cover by Jack Davis, Lisa King and Michael Gosney combined scanned images with Adobe Illustrator elements (this cover won a magazine industry award). "PC Fashion Design." Mel Ristau's "Electroglyphs" -iconic PostScript illustrations. Georganne Deen's "Rock and Rolling Amiga." "Sound Sampling Sensation" by Neal Fox. A how-to on shooting slides off your high-resolution monitor. OUT OF PRINT.

2.3 Fall '88 "Space" concept issue cover by Tom Gould utilizing Aldus FreeHand 1.0. "Outer Space" gallery of cosmic visions by Ron Cobb and William Lombardo. Architectural CADD survey with "Living Space" gallery. "Art Space" gallery features works by Bert Monroy, Ikeda Tomoyo and Dominique de Bardonneche-Berglund, digitally separated with PixelPaint 2.0. Nicholas Mac Connell and Linnea Dayton travel to "Inner Space" with "Through the Silicon Looking Glass,' an exploration of PCs as mind machines. John Odam on PixelPaint. \$7.00

3.1 Winter'89 "The Word" issue cover illustration by Tom Lewis and company with FreeHand. Jack Davis' "Initial FX" on special-effect initial caps. Mike Kelly's "Grammar and Style Checkers." A parody on "Third-Generation Software for Writers" by Michael Rossman. The first Verbum Interview with the intelligent program Racter. Gallery of image-laden poetry and poetic images. John Odam takes a second look at Fontographer and font design. OUT OF PRINT.

3.2 Spring '89 "4D" issue cover by Jack Davis with Pro3D and Photo Finish. "The Democratization of Computer Graphics" by Peter Sørensen. "Down to the Desktop" by Gregory Mac-Nicol. "MIDI-Laser Performance Art — Cosmic Jam" by Nicholas Mac Connell. "The Telemorphic Future" by Tad Williams. "Hyper-Animation," by Elon Gasper. "Interactive Artistry" with pioneering HyperCard projects. The Verbum Interview with Todd Rundgren. "HyperGallery" features HyperCard art and the "4D Gallery" showcases animated visions. Produced with PageMaker 3.01 and includes many digital color separations. \$7.00

3.3 Summer '89 "Lifestyle" theme issue with cover designed by David Smith using Adobe Illustrator 88. Brenda Laurel's essay, "On Dramatic Interaction," is a definitive study of virtual reality and the dramatic arts. An update on "Computer-Aided Fashion Design." Russel Sipe covers hot computer games. Mark Stephen Pierce writes about designing games in "Making Fun." Columns cover telecom and health issues for PC users. The Gallery emphasizes human forms. \$7.00

3.4 Fall '89 "Metaprint" issue focuses on output, with a Gallery that explores printing options. Cover by John Odam using Free-Hand 2.0. "Separation Anxiety" by Steve Hannaford. "Pixels at an Exhibition" by Brian Alexander studies the techniques for putting PC art on the wall. "Imagine Tokyo '89" recounts the latest major Verbum-produced exhibit with four pages of art and photos (all separated with the Scitex/Visionary system). "Architectural CAD on the Macintosh" by Phil Inje Chang. The first installment of David Traub's "Neomedia" describes the educational advantages of videodisc barcode readers. "First Contact" explores PhotoMac color separation/editing software. OUT OF PRINT.

4.1 Spring '90 "The Word" revisited is the first perfectbound issue. Steve Roth's "W(h)ither PostScript?" provides a definitive report on the essential page description language. "The Interlocution Solution" by Christopher Yavelow and "OCR" by Mike Kelly bring us to the cutting edge of voice recognition and optical character recognition, respectively. George Seibt's "Oh George! Where Has All the Film Gone?" gives a thorough overview of still video technology. The

"Type Gallery" features creative font forms. In honor of the 20th anniversary of Earth Day, a colorful "Earth Gallery." "Neomedia" begins a glossary of new media terminology. "Against the Grain" covers the industry changes in digital font standards. John Odam's "First Contact" takes us through 3D rendering of type. \$7.00

4.2 Summer-Fall '90 The "Blendo Issue" focuses on movement, synergy, and the convergence of creative cultures through computers. The "60's/90's Trip" by Michael Gosney looks at the melding of subcultures at Verbum's annual San Francisco Digital Art Be-In. "MultiMIDIa Performance Art" by Marc Weidenbaum examines several artists' fusion of sound and vision through digital creativity. Galleries focus on Blendoimage montage and animation - and interactivity, with a selection of noteworthy multimedia design projects. The debut of 'Secrets of the Universe Revealed," the Verbum How-To column, features Bert Monroymaking multimedia. John Odam makes type with FontStudio. David Traub offers his "Neomedia Glossary" and industry observations. Steve Hannaford plays devil's advocate with "MuddyMedia Re-

4.3 Winter-Spring '91 "Digital Art Lifestyle" explores the "set and setting" of those working with PCs. Michael Gosney's Intro covers "Creative Computers/ Creative People" and "Virtual (What Is) Reality?" Steve Hannaford explores "Home Office Politics." The Verbum How-To features Jack Davis' type effects with Photoshop, John Odam makes his "First Contact" with SuperCard and Macro-Mind Director, converting a book to hypermedia format. Dave Traub's "Neomedia"

visited." The lead feature

story sizes up the NeXT

Cube. OUT OF PRINT.



Verbum 1.0



Verbum 21



Verbum 3.3



Verbum 1.1



Verbum 22



Verbum 3.4



Verbum 1.2



Verbum 23



Verbum 4.1



Verburn 1.3



Verbum 3.1



Verbum 4.2



Verbum 3.2



Verbum 4..3

takes readers on a hypertour of key multimedia conferences. The Verbum Interview with rock legend Graham Nash and partner Rand Wetherwax reveals Nash's enthusiastic involvement with digital photo output and multimedia. "The Smart Studio" profiles electronic design, MIDI, and multimedia studios. Gene Brawn's "Confessions of an Amiga User" details the new world of Amiga, including the Video Toaster and CDTV. The Gallery concentrates on human forms.

8 0 0 K S The Verbum Book of PostScript Illustration by Michael Gosney, Linnea Dayton and Janet Ashford

(M&T Books). The first title in The Verbum Electronic Art and Design Senes offers comprehensive instruction on the use of leading Post-Script illustration tools on PCs. Featuring projects by top illustrators such as Don Baker, Bert Monroy and John Odam, the book recounts each artist's stepby-step process, both technically and creatively. Post-Script technology and key products are covered thoroughly, but the emphasis is on the creative process. The book includes color signatures and over 100 sample illustrations. 224 pages, 32 in 4-color, 8.5" x 11", \$29.95

The Verbum Book of Electronic Page Design by Michael Gosney and Linnea Dayton (M&T Books). The second volume in the Verbum series explores desktop publishing design on Macintosh and IBM systems. Top professionals such as Tom Lewis, Laura Lamar and Clement Mok guide us through the electronic design process for real projects. Leading DTP applications and support programs are thoroughly covered. Over 100 sample designs, 224 pages, 32 in 4color, 8.5" x 11", \$29.95

The Verbum Book of Digital Painting by Michael Gosney, Linnea Dayton and Paul Goethel (M&T Books). The third book in the Verbum series focuses on bitmapped illustration, the most "painterly" of electronic art tools. With the same format but twice as many color pages as the other books, this is a creative feast for both commercial and fine artists. Features projects by leading artists such as Trici Venola, Míchael Scaramozzino and Sharon Steuer executed on Macintosh and IBM systems, plus a stunning gallery of digital paintings by a vanety of artists working in a wide range of styles. 224 pages, 64 in 4-color, 8.5" x 11", \$29.95

The Verbum Book of Scanned Imagery by Michael Gosney, Linnea Dayton and Phil Inje Chang (M&T Books). The fourth book in the Verbum series focuses on the capture, editing and manipulation of scanned images. Accomplíshed artists such as Mike Uriss, Michael Johnson and John Knoll take us through step-by-step development of projects, with plenty of tips and tricks. Each chapter covers a main project along with a portfolio of additional works created by the featured artist, highlighting the interesting aspects of each one. Scanned imagery technology and key products are thoroughly described in the first section of the book. This volume also includes an extensive gallery showcasing the imagery of leading artists working with digital photography. 224 pages, 32 in full color, 8.5" x 11", \$29.95

The Verbum Book of Digital Typography by Michael Gosney, Linnea Dayton and Jennifer Ball (M&T Books). The fifth book in the Verbum series cover digital type creation and design. Recognized designers such as David Smith, Jonathan



YERBUMALIA

Hoefler and Cleo Huggins recount the step-by-step development of type design projects, with graphics and screen dumps. As in the other books, each chapter covers a main project along with a portfolio of additional works created by the featured artist, highlighting the interesting aspects of each one. Digital type tools, standards and key products are thoroughly described in the first section of the book. This volume also includes an extensive gallery showcasing original fonts and type design by leading designers. 224 pages, 8.5" x 11", \$29.95

The Gray Book — Designing in Black and White on Your Computer by Michael Gosney, John Odam and Jim Schmal (Ventana Press). This book is a cornucopia of information and examples, showing how to achieve effective designs and illustrations with one color. Covers the basic principles of single color design, including contrast, shades of gray, light and shading, scanning, etc. The book contains over 250 computergenerated designs and illustrations, including the extensive Gray Gallery, a feast of artwork by some of the top artists in the field, with tips on how the works were accomplished. 9.25" x 7.5", 224 pages. \$22.95

PRODUCTS

Verbum Stack 2.01991 version with usable icons and start-up screens, as well as tons of great bitmap art, animations, sounds, surprises. Shipped on two 800 K floppies. \$12.00 ppd.

Verbum Digital Type
Poster Designed by Jack
Davis and Susan Merritt,
this deluxe 5-color, 17" x
22" poster showcases the
vaniety of digital type effects
possible on the Macintosh.
It was produced on a Mac II
with PageMaker, output on
a Linotronic L-300 and

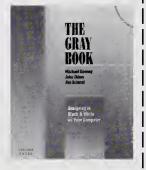














i	V	 K	5	U	M	V	ĸ		· ·	ň.		U_	n	N	•
į	Name _						_								
	Address														_
į	Cíty	 _						St	tate _		_ ZIP				_
I	Phone			-				Co	ountry						

Q ty	Item	Price	Tota
	One-year / 4-issue subscription (Canada & Mexico \$28, all other countries \$45)	\$24.00	
	Two-year / 8-issue subscription (Canada & Mexico \$54, all other countries \$85)	\$46.00	
	Verbum Interactive 1.0 CD-ROM	\$49.95*	
	Back Issues – (circle issue/s) 1.2, 1.3, 2.1, 2.3, 3.2, 3.3, 4.1, 4.3	\$7.00*	
	Verbum 1.0	\$20.00*	
	Verbum 1.1	\$12.00*	
	The Verbum Book of PostScript Illustration	\$29.95*	
	The Verbum Book of Electronic Page Design	\$29.95*	
	The Verbum Book of Digital Painting	\$29.95*	
	The Verbum Book of Scanned Imagery	\$29.95*	
	The Verbum Book of Digital Typography	\$29.95*	
	The Gray Book	\$22.95*	
	Verbum Stack 2.0	\$12.00 ppd	
	Verbum Digital Type poster	\$10.00 ppd	
	Verbum T-shirt 2.0 — Large only	\$17.00*	
	ORDER SU	JBTOTAL \$	
CA resid	lents add 7% sales tax to all ítems other than subscriptí	ons. TAX \$	
	3.00 for first item and \$1.50 for each additional item. For subscriptions) will be charged for Air Mail delivery.	eign orders HIPPING \$	
Pavme	nt must accompany order. US funds only.	TOTAL \$	

printed on a 100 lb. coated sheet. The text explains the history of initial caps in publishing and how each sample letter was created. A framable "illuminated manuscript" for every electronic design studio. Limited edition of 2000. Shipped in capped tube. \$10.00 ppd.

account #

Verbum T-shirt 2.0 Illustrations, on back and front, developed by Jack Davis with Adobe Photoshop, Swivel 3D and TypeAlign on the Mac. The second Verbum T-shirt uses fun 50s images in a blatant promo for a provocative 90s art mag. Printed in red and black on both sides of heavy white 100% cotton shirts. Large only. \$17.00

Credit card orders: Phone 619/233-9977 or FAX 619/233-9976. MCI/MacNET: VERBUM

Send to: VERBUM, PO Box 12564, San Diego, CA 92112

Please allow six weeks for delivery of order.



Verbum T-shirt back

-"That which is true in life always gives the feeling of intelligence."

— Antonin Artaud



The more intelligent paint program...

Color MacCheese Version 2.0 Color Paint for Macintosh.

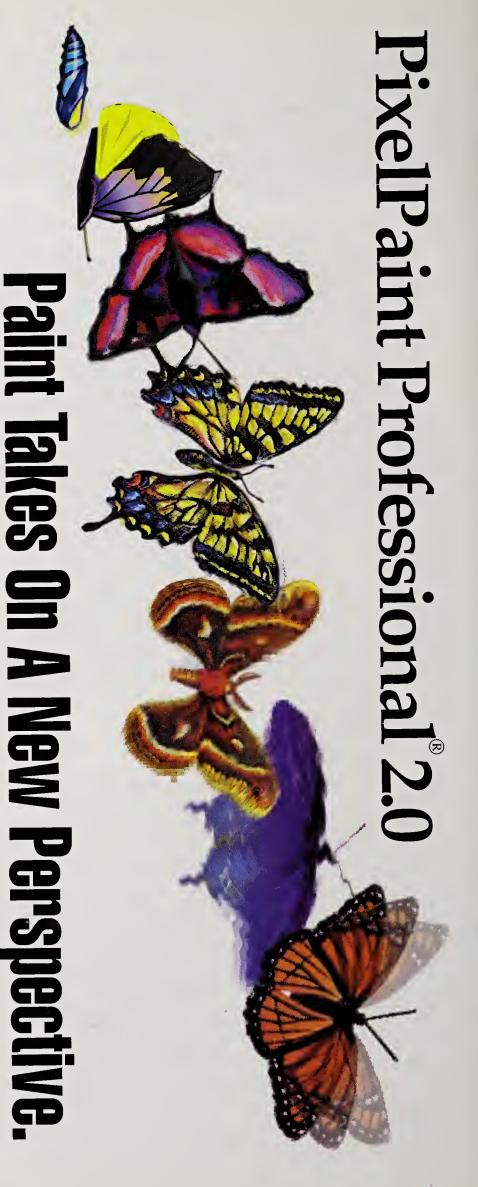
Ideal for graphic/illustrative art students and professionals.

For more information please contact:

Delta Tao Software, Inc.

760 Harvard Ave., Sunnyvale CA 94087 800-827-9316 or 408-730-9336

-FAX 408-730-9337-



Redefining the Paint Category

designwork requiring image compositing, 8-bit a few commands or brushstrokes. And precision controlled warping is dramatically simplified. ettects such as embossing, patterning, tinting or masking, transparency and antialiasing or special category into artistic image processing. Demanding Color Paint. Now, version 2.0 extends the Paint PixelPaint Pro defined the category of Professional designs come out looking the way you expect them controls and full color separations mean your Photographs can be turned into spectacular art with

pamphlet: "How to Compare Professional Paint Packages." none in 24-Bit Color Paint. Call (800) 624-8999 x210 to receive your FREE Thousands of designers already know PixelPaint Professional is second to

While Better Simulating Traditional Paint

airbrushes, combine to create outstanding, natural such as linen, charcoal paper or even concrete, and 2.0 has the tools you've been searching for! And, if you enjoy working with physical media, Pro pressure sensitive brushes, charcoals, pastels and manipulating your strokes before applying them to object-oriented paint tools allow you to continue flexibility of Macintosh®-assisted design—Pro 2.0's PixelPaperTM, which simulates textured surfaces documents up to 4096 x 4096 pixels. All with the painterly effects on a computer. In autoscrollable



A second generation in Paint, Pro 2.0 is easier to use With Second Generation Interface Breakthroughs

redesigned with the designer's needs in mind. than ever before because the interface has been eliminating the guesswork from and shapes you have chosen, climbing through a jungle gym of menus. The to immediately access and apply tools without Floating palettes and multiple documents allow you Balloon Help under System 7.0, your designwork. And, with interface visually informs you of the effects, sizes

or verbally tells you what each